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Number 5



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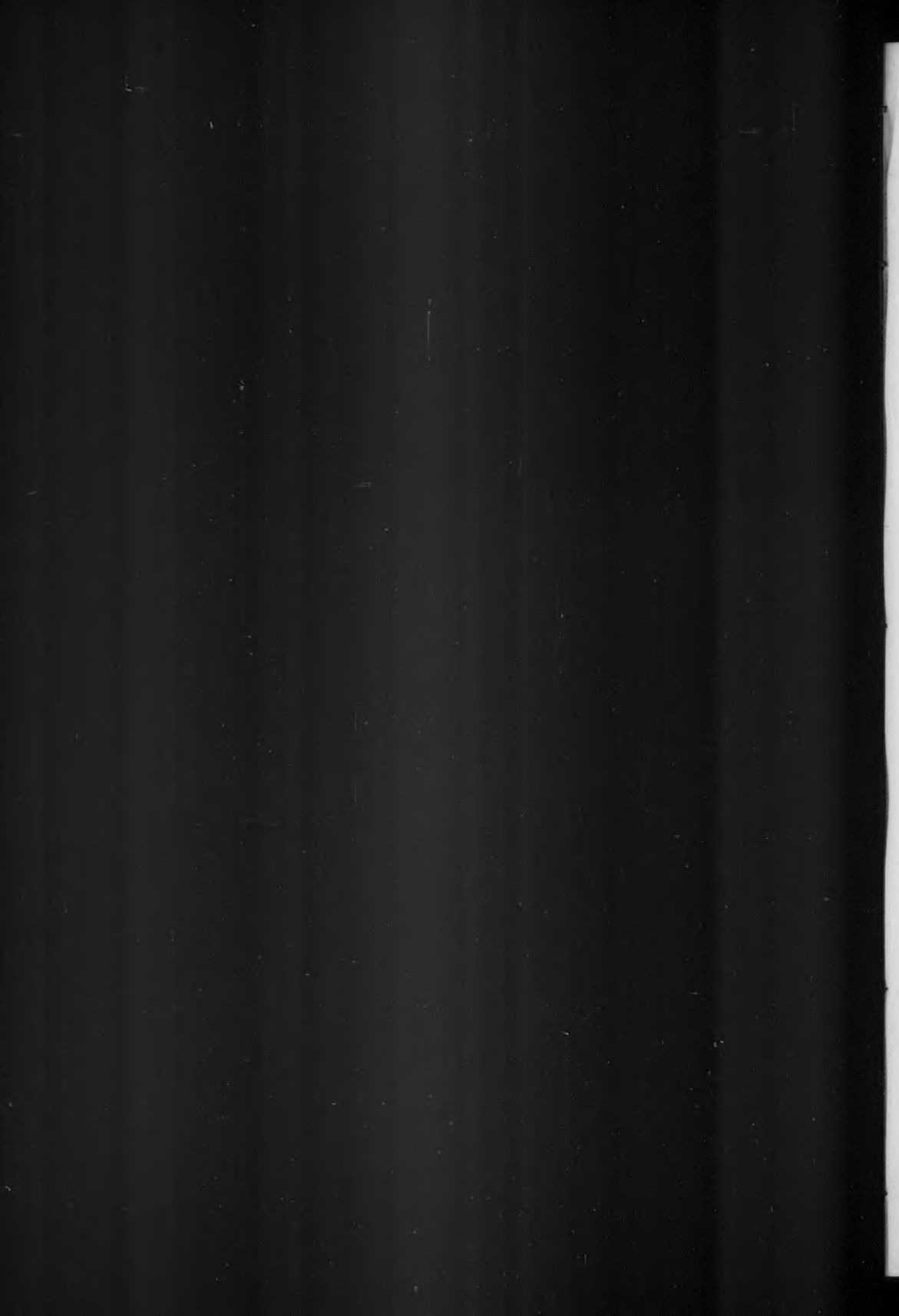
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THE BIRDS OF FANNING ISLAND, CENTRAL PACIFIC OCEAN

WITH EIGHT PHOTOS

By HAROLD KIRBY, JR.

THE GROUP of coral formations in the Central Pacific known as the Fanning Islands consists chiefly of five atolls: Palmyra, Washington, Fanning, Christmas, and Jarvis islands. These islands lie close to the equator, the first four a few miles north of, and the last about eighty miles south of, the line. They are nearly directly south of the Hawaiian Islands; Palmyra, the most westerly, is in longitude $162^{\circ} 6' W.$, and Christmas, the farthest east, is in longitude $157^{\circ} 28' W.$ The islands are all low, possess vegetation in varying amounts dependent on the rainfall, which is greatest at Washington and Palmyra, less at Fanning and Christmas, with scarcely any at Jarvis, and are kept cool and habitable by the constant trade winds. The relative humidity is about 75 percent at Fanning, but higher at Palmyra and Washington, while the temperature ranges from 75 to 90 degrees. The climate is very pleasant.

All of these islands are well populated by birds. During a trip to Fanning in the summer of 1924, collections and observations were made of the birds there, and visits to Washington, Christmas, and Jarvis afforded interesting comparisons. I was able to visit the latter two through the kindness of the Bishop Museum Expedition, with Prof. C. H. Edmondson in charge. Thanks are especially due to the Fanning Island Limited, a copra company with a plantation at Fanning Island; in whose service Professor W. B. Herms and the writer made the trip. I am indebted to Dr. Alexander Wetmore, Assistant Secretary, Smithsonian Institution, for a critical reading of this manuscript and for supplying the scientific names to be used for the species concerned. To Dr. J. Grinnell, Director, and Mr. H. S. Swarth, Curator of Birds, Museum of Vertebrate Zoology, University of California, I am indebted for aid of various sorts—first in making ready for the trip on which these observations were made, and also for criticism and assistance in preparing this paper for publication. Specimens were collected of each species of bird here listed from Fanning Island, and these are now in the collection of the Museum of Vertebrate Zoology.

An investigation of the birds of Christmas Island was carried on by the Whitney Expedition from the American Museum of Natural History in 1921. The birds of the Hawaiian Islands, which include many of the same species, have been thoroughly studied in the last few decades. Thos. H. Streets (1877) made collections from

Christmas, Palmyra, Washington, and Fanning islands. In 1883 Canon Tristram published a description of the Kokikokiko of Fanning Island, and notes on some of the other birds found there. Rougier (1914) reported on the birds of Christmas Island, of which island he is the owner. S. C. Ball and C. H. Edmondson made small collections from Fanning in 1921. The Bishop Museum Expedition of 1924 collected on all the islands mentioned.

Fanning Island is a typical coral formation. A ring of low land, shaped like a footprint, surrounds a shallow lagoon, and a passage deep enough for a schooner, as well as two more very shallow passages, connects lagoon and ocean. Vegetation covers most of the land, save the tidal flats. As the island is used as a coconut plantation, coconut palms, wild or planted, are replacing the original "bush", which is being cleared away as rapidly as possible. Still, wild vegetation is abundant in the uncleared portions. The rim of the ocean beach is bordered by a dense, almost impenetrable growth of *Scaevola frutescens* and *Tournefortia argentea*. In most places palms occupy the land between this hedge and the lagoon, but in parts umbrella trees (*Tournefortia*) grow abundantly. *Pisonia grandis*, the largest tree, and *Pandanus* are present in limited numbers. Besides these trees there are several herbaceous plants. *Monerma repens* forms grassy beds, offering comfort for some of the ground nesting birds. Creeping vines of *Ipomoea glaberrima* often add to these beds. *Portulaca oleracea* covers the ground in places, and *Sida fallax* sometimes forms dense thickets.

Vegetation at Washington Island, which is much more moist than those islands east of it, grows luxuriantly, forming impassable jungles in places. The trees, which are the same on all these islands, are taller and afford better rough lumber; and there are several plants which are absent at Fanning, as *Asplenium nidus*, the bird's-nest fern. Coconut palms in all stages of growth are abundant, for the nuts have been allowed to sprout where they fall, which they do readily because of the abundant rainfall. In recent years, though copra has been harvested, the island has been visited only at intervals and then left undisturbed for months at a time. Christmas Island is rather dry and barren, but there are many umbrella trees and extensive *Scaevola* growths, as well as much grass, *Portulaca*, *Sida*, and other small plants. Jarvis Island is quite barren, having nothing but very low grass and herbs, and there are no trees for those birds which nest in trees elsewhere. From the report of Rock (1916) it seems that the Palmyra Islands are as richly wooded as Washington.

Birds were more abundant formerly on these islands than they are now, for they have been much disturbed and, especially at Fanning, deprived of nesting sites by clearing. Rougier (1914) records the presence of "millions and millions" at Christmas Island, and states that the Japanese used to poach birds there. But birds are still very numerous and have not, save at Fanning, become very much accustomed to the presence of man, so that they exhibit little fear. There is no limit to the food available for sea birds, and the two species of land birds certainly find enough for their needs.

The voyage from San Francisco to Fanning Island was made in a small schooner which sailed most of the way under a good wind. This trip gave an excellent opportunity for the observation of the birds and fishes that came near the ship. The Black-footed Albatross (*Diomedea nigripes*) soared about us from about 350 miles out to within a few degrees from the tropics. With a good trade wind blowing from behind, they generally sailed behind or beside the ship, scarcely ever flapping the wings, or rested for a time on the water. When the birds turned against the breeze they generally rose kite-like, and after attaining a height of perhaps twenty-five feet they tipped, generally on the left side, and turned to glide with, or at an angle to, the

wind. They may also rise when sailing with the wind. When an albatross alights on the water the wings are raised, the legs and feet spread, and it settles slowly onto the surface, finally folding up the wings carefully.

At the time *Diomedea* left us, in latitude 26° , the first flock of Red-tailed Tropic-birds (*Phaethon rubricaudus*) was seen flying high with energetic wing beats and continual squawking. These "Bos'n Birds" were seen at times for several days after this, while we were near the Hawaiian Islands, and one or two again near the Fannings.

After crossing latitude 10° N., a few Boobies (*Sula piscator*) came near and we were able to watch them diving for flying fish, which were very abundant, rising by hundreds near the bows of the schooner. The Boobies fly with much flapping and some soaring, often tipping the water. A bird sights a fish from about thirty feet above the water, bends the wings suddenly, drops headlong, disappears beneath the surface, and in a few seconds comes up with the silvery fish in its bill.

At Fanning Island there are two species of land birds and nine of sea birds, as well as a few migrants. The Red-tailed Tropic-bird was the only species that is said to occur there at times and which we did not find in spite of thorough exploration.

Procelsterna cerulea (F. D. Bennett). The local name for this little tern is the "Grey Love-bird", because of its resemblance to the White Love-bird (*Leucanous alba kittlitzi*). It flies near an intruder as that species does, and resembles it also in delicacy and beauty. The two occur together in the coconut groves south of the settlement and more abundantly across the lagoon, in the southwest portion of the island ring.

When disturbed the birds fly with quick, soft wing beats in wide circles among the palms, keeping, for the most part, quite silent. At times they utter a whistled *prrrreeee*. It is difficult, as Fisher (1903) notes with regard to *P. saxatilis*, to discover the nest of this tern. At one time, after watching a bird fly about until it came to rest in a slanting palm, I climbed the tree. A quantity of rubbish, consisting of dead palm leaves, sheaths and grass, was gathered just below the crown, and in the hollow among the dead grass stems I found one egg. This egg was smaller than that of *Leucanous*, ovate, quite narrowly pointed at one end, and heavily spotted with brown, especially at the larger end. Although this was the only nest found, it is probable that the usual nesting place at Fanning is in the crown of palm trees, on rubbish gathered at the base of the fronds.

Anoës stolidus pileatus (Scopoli). Noddy Terns are recorded from Palmyra and Christmas islands by Streets (1877), who states that they build nests of twigs in the forks of trees. At Christmas they are the least abundant of the terns, but are quite numerous at Fanning where they stand in large flocks on the flats or roost in the coconut and umbrella trees. They were not breeding in abundance there. The nests, built of twigs and sticks roughly gathered together, may be close to the ground on grass and shrubs, in the crotches of trees, or at the bases of coconut leaves. On Christmas Island, in August, some were nesting on platforms of sticks built on tufts of grass on small islands in the lagoon, each sitting on a single spotted egg. The gregarious habits of *Anoës* are interesting. They gather in large numbers on the tidal flats and lagoon shores and are often seen flying in large numbers at sea, indicating by their activities the presence of schools of fish. As stated by Watson (1908), who has made a thorough study of the behavior of these birds in the Tortugas, they pursue schools of minnows which are jumping out of the water, in efforts to escape larger fish.

Noddies are commonly seen roosting in the coconut trees and flying over the tidal flats drinking from the "streams". They fly about all night through the coconut groves, uttering frequent harsh cries.

Megalopterus hawaiiensis (Rothschild). In the infrequently disturbed north-western part of the Fanning Plantation, where there are *Tournefortia* trees in abundance, numbers of this white-crowned black tern are seen nesting on the branches. The nest is composed of leaves and twigs plastered onto a crotch of the branch and soiled with a good deal of excrement. They are not abundant at Fanning, as they are at Christmas Island on Motu Manou and Cook islands, where some small, leafless umbrella trees bear a bird on almost every crotch.

During the visit to Christmas Island, early in August, the young birds were rapidly nearing maturity, but there were also many unhatched eggs in certain groups of nests.

Leucanous alba kittlitzi (Hartert). On the Fanning Islands the "White Love-bird" is the most attractive of the sea birds. It occurs everywhere in the coconut groves and *Tournefortia* bush, and is the most abundant of the three terns present. Among the trees where these birds are breeding, many may fly about one's head, approaching very closely. They are mostly silent, but at intervals when flying they utter a metallic note.

At noon one day a White Love-bird was seen carrying a small fish to the top of a broken-off coconut trunk. There was, however, no recipient there, and the bird seemed bewildered. An observant inhabitant of the island stated that the young bird had been taken away, and that the adult would carry that fish about "until sundown". He had often seen a bird do so under similar circumstances.

There were several birds at the camps which had been captured young and tamed, and sat all day on sticks waiting to be fed. These birds, accustomed to being fed by man, would endure being handled.

The interesting nesting habits of *Leucanous* have been described in many reports. Fisher records that at Laysan they generally lay their eggs on lumps of phosphate rock, among bush grass, or under the overhanging shelter of some shrub or clump of vines. Streets states that on Christmas Island, because of the absence of trees, the eggs are laid on the surfaces of large coral blocks. At Palmyra, however, Streets found that the single egg was placed on the naked branch of a tree, as occasionally at Laysan (Fisher). At Fanning Island the egg is placed on the branch of a *Tournefortia* tree, on a bare limb that is often quite small, where it is not attached in any way. None was observed on blocks of rock or on the ground. Over this precariously situated egg the bird sits or stands, and may readily fly away when disturbed. One egg was found on the mid-rib of a coconut leaf about two feet from the trunk, at a distance of ten feet from the ground; when the leaf was pulled down at the end the egg rolled off, and only then did the parent bird fly away. The presence of other "fairy terns" on coconut leaves indicated that this habit is not uncommon.

At Christmas Island most of the terns seen, on Motu Manou and Cook islands, had laid eggs on *Tournefortia* branches and not on coral blocks. *Leucanous alba kittlitzi* is very abundant at Washington Island, where its habits are the same as at Fanning. At Jarvis Island, where there are no trees, it is not present.

Phaethon rubricaudus (Boddaert). The Red-tailed Tropic-bird was not observed at Fanning Island during our stay, but it was stated by an inhabitant that it has been found nesting there, though rarely. Likewise, on Washington Island the bird is not found. When we crossed into the tropics on the *Doris Crane* this species was seen in small numbers for several days, flying high and squawking.

On Christmas Island the bird is common, nesting on the ground under *Scaevola* shrubs. *Scaevola* grows over large areas on Christmas Island, and in certain sections

of the growth there are colonies of *Phaethon*. The individuals of the colony are not gathered close together, only one or two being seen under a single bush, each sitting on the single reddish brown egg which is laid on a few gathered leaves.



Fig. 47. LARGE LIMESTONE SLABS PILED ON THE BEACH AT JARVIS ISLAND. UNDER THESE, MANY RED-TAILED TROPIC BIRDS WERE NESTING. THE SLABS FURNISH THE ONLY SHELTER ON THIS SMALL ATOLL.



Fig. 48. CLOSER VIEW OF A NEST OF THE RED-TAILED TROPIC BIRD, SHOWING AN ADULT AND A YOUNG BIRD.

There are many of these birds nesting on Jarvis Island, where there are no trees or shrubs to afford shelter. For shelter the birds utilize the coral slabs which are

piled up on the western shore. Some of these slabs are several feet square, and are piled up in such a way that there is plenty of room under their edges. At the time of our visit almost all the available rocks sheltered adults with eggs or young.

Phaethon lepturus Daudin. The White-tailed Tropic-bird, as it is locally named, is not abundant, but is rather conspicuous at some distance south of the settlement at Fanning, where it may fly low among the palm trees, gleaming a beautiful white in the sunshine. The very long white tail feathers are quite noticeable. Others fly very high, generally in companies of three or four, uttering incessant squawks and constantly beating the wings. The inability to soar is in marked contrast to the powers of the Frigate-birds, which are to be seen there also.



FIG. 49. THE RED-FOOTED BOOBY ON FANNING ISLAND. THE NEST IS A MASS OF STICKS IN AN UMBRELLA TREE; IN IT TWO EGGS ARE LAID. THIS IS THE MOST NUMEROUS OF THE BOOBIES ON THAT ISLAND.

Phaethon lepturus nests in the tops of tall coconut trunks which remain standing after the crowns have broken off. The two white tail feathers protrude when the rest of the bird cannot be seen. On the elevated islands the birds are said to select inaccessible precipices for nesting sites. This instinct to build high is exemplified by their selection of the highest available places at Fanning. It is present in similar situations at Washington Island, but is absent at Christmas; according to Rougier its absence there is due to the fact that there are no crownless coconut trunks.

Sula piscator (Linnaeus). The Red-footed Booby is the most abundant bird on Fanning Island, building its nests in the *Tournefortia* trees almost everywhere that these are growing. The white birds show up against the green for a long distance, and dot the green thickets. The odor and uncleanness of a place where there are many of these birds nesting is very unpleasant, as is also their harsh squawking.

The nesting period extended over the whole time of our stay, from May 5 to October 3. In September the nests mostly contained well grown young birds, one to a nest, which were then acquiring the adult plumage. As has been repeatedly

observed regarding these birds, two eggs are laid, but only one young comes to maturity. The nest is a platform of twigs, mingled sometimes with *Tournefortia*

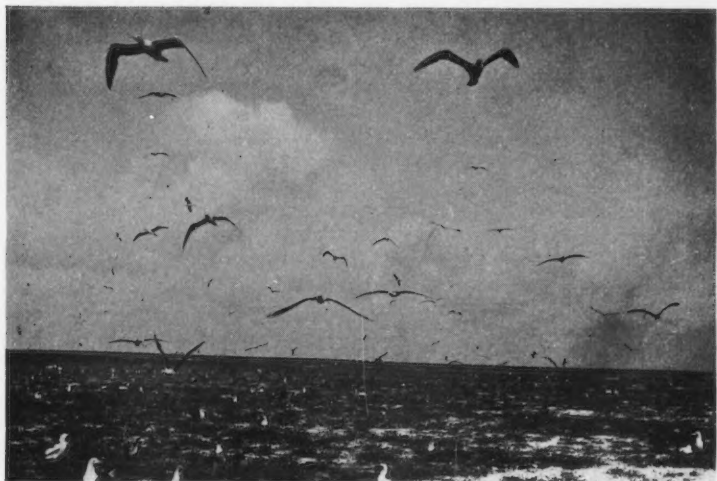


Fig. 50. A COLONY OF RED-FOOTED BOOBIES AT JARVIS ISLAND. MANY BIRDS ARE ON THE GROUND, OTHERS IN FLIGHT.



Fig. 51. A NEST OF THE RED-FOOTED BOOBY AT JARVIS ISLAND, WHERE THERE ARE NO SHRUBS. A YOUNG BIRD IS ON TOP OF A LARGE PILE OF STICKS COMPRISING THE NEST.

leaves, and is covered with excrement. The adult sits on this nest until the nestling has grown large enough to take up all the room, when the parent stands on a nearby

branch. The head of the young bird, when it is resting, often hangs down over the edge of the nest. Boobies generally do not fly when approached, or even when threatened with stick or gun, but present vicious bills and give noisy squawks.

The Red-footed Booby is very abundant also at Christmas, Washington and Palmyra islands, and is often met with in numbers at sea. The habits of nesting in umbrella trees are the same on all these islands.

At Jarvis Island they find no umbrella trees. During a visit early in August, 1924, they were found nesting in several colonies. The nests, built on the ground, consisted of piles of sticks from quite low to a foot or more high, much soiled with excrement. This habit is noteworthy. Fisher (1903) states that they never nest on the ground, and they do not when there are trees available. Boobies flew about the ship off Jarvis in large numbers.

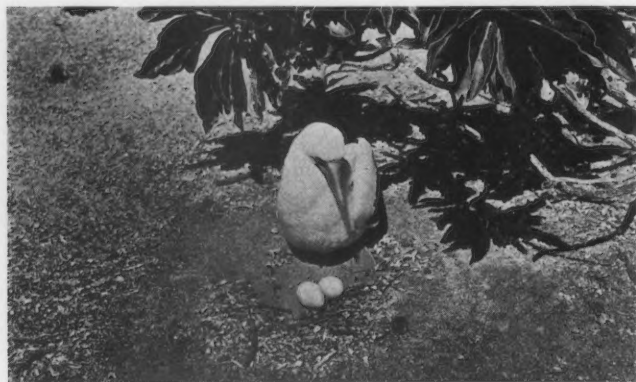


Fig. 52. THE BLUE-FACED BOOBY ON FANNING ISLAND. THERE ARE TWO EGGS IN A CRUDE NEST CONSISTING OF A DEPRESSION INTO WHICH A FEW TWIGS ARE GATHERED, UNDER AN UMBRELLA SHRUB.

Sula dactylatra Lesson. The Blue-faced Booby is now very scarce at Fanning. The birds are almost never seen unless the nesting grounds are visited, and these nesting grounds are in a single remote part of the island. Probably there are few more than a score of them on the whole atoll. On a tidal flat near the ocean beach at the extreme southern part of the ring a colony of ten birds was visited. Early in July there were three nests, each containing two eggs, and two well grown young birds. One of these had white down, the other, brown mottled plumage. The nest is extremely simple, for the eggs are laid on the bare ground, sometimes with a few leaves and twigs collected in a shallow depression.

Near the place where these boobies were nesting, more than a score of Frigate-birds were soaring high in the air. Each time a *Sula* flew up, frightened at my approach, a number of the "hawks" would beset it, pursuing closely until it either disgorged a fish or alighted on the ground. Before rising, the boobies would look about anxiously, evidently expecting an attack by the hawks.

Sula dactylatra is rare on Washington and Palmyra islands, but is present in fair numbers on Christmas and Jarvis. The nests are isolated, mainly located near the

ocean beach and the surf. Early in August there were young in all stages of development, from eggs to nearly full grown birds. This is the largest and least abundant of the birds on Fanning Island.

Sula leucogastra (Boddaert). The common Brown Booby is fairly abundant on Fanning, especially on the southern and southeastern shores. The nesting grounds, where numbers of the birds congregate, are just above the beach rim among the grass and weeds. There are likewise a few on the northeastern and eastern shores. The nests are rudely constructed of a few twigs gathered together on the ground among rocks and grasses. They were in all stages of development from eggs to large downy young, when visited early in June. In September almost all had finished nesting, and only a few young birds, already growing the sleek brown feathers, were still unable to fly. At times the Brown Booby was seen flying over the lagoon or out at sea in company with *Sula piscator*.



Fig. 53. THE BROWN BOOBY ON FANNING ISLAND, ONE ADULT AND NEST IN A COLONY OF THE BIRDS. THIS BIRD IS IN A DEFIANT ATTITUDE, PREPARED TO DEFEND THE NEST.

Only a few were seen at Christmas Island, but they are said by Father Rougier to be abundant at the southern end, nesting in June, July and August. This portion was not visited. On the southern, windward side of Jarvis Island, near the Man-o'-war-birds, a few nests were found in August.

Fregata minor palmerstoni (Gmelin). The Frigate-bird is a persistent parasite of the boobies on Fanning Island, feeding, as it does, only on stolen fish. None was seen purveying for itself, as Chapman (1908) says they do, excepting that fish left lying on the ground by fishermen were sometimes picked up; nor were any seen devouring unprotected young of other birds, a habit they are said to have. The birds will very skilfully catch fish thrown up to them, and, as stated, are able to pick fish off the ground. There are always a number about places where fish are being caught. They were often seen drinking from the "streams" on the tidal flats and from the

lagoon. The pursuit of boobies of all three species was repeatedly observed, and the "hawk" scarcely ever failed to catch in the air the fish disgorged by the squawking victim. The fish sometimes falls on the surface of the water, and then it seems to be difficult for *Fregata* to secure it; in one case four or five dips were necessary before the fish was taken up. The natives often catch the bird by attracting it to fish held in the hand and grabbing the legs when it comes close enough.

Frigate-birds nested in numbers in the less frequented parts of Fanning during our stay from May to September. At Jarvis Island early in August there were two large colonies nesting close together. The young birds of one colony and half of the other were nearly full grown, but the second half of one colony had eggs and very young nestlings, which would certainly not reach full development until late in the year.



Fig. 54. A PORTION OF A COLONY OF FRIGATE BIRDS AT JARVIS ISLAND. MOST OF THE BIRDS SEEN HERE ARE YOUNG, WITH BROWN HEADS. IN THE FOREGROUND THERE IS AN ADULT FEMALE SITTING ON A SINGLE EGG IN A NEST CONSISTING OF STICKS PILED A FOOT HIGH.

When there are trees present, *Fregata* builds its nest of dead sticks and twigs among the branches. *Tournefortia* is always selected at Fanning, but at Christmas, where there are large areas covered with *Scaevola*, nests were in the tops of these, five or six feet from the ground. These structures are platforms only a little larger than those of *Sula piscator* and equally filthy with excrement. Early in August there was a large brown-headed young bird, growing black feathers, on each of the nests. At Fanning the nests are generally built in the same trees with the nests of *Sula piscator*.

The habits of the Frigate-birds at Jarvis are unique. The nests are quite large piles of sticks, all filthy. They are of variable height, from quite low to a foot and more, and are placed close together, some not more than a foot apart. There were two colonies of not less than seventy-five birds each, one near and one on the rim of the beach on the southern side of the island. On each nest of one colony sat a single,

full-grown young bird with a brown head; the adults were generally soaring high in the air. On certain of the nests, however, a male or a female was sitting on an egg or a young bird.

An observation was made of a struggle of four males, all with swollen gular pouches, for a nest. Originally a male with a greatly expanded pouch was standing on the platform of sticks. Then he flew away and after a time a male, probably the same one, came and deposited a twig on the platform, departing at once. Another occupied the platform until he returned and managed to seize and fly off with the twig he brought. Four males then began fighting. One would alight on the nest; another would come and peck at him or cross bills with him with an audible knocking. When the intruder drove his opponent off, another came and fought with him, and such combats continued until finally a male with a big pouch retained undisputed possession.

Sounds were heard from the adults of both sexes during mating activity. The musical, owl-like, vibrant cry of the excited male when the pouch is blown out and a female is flying near may be responded to by a note like a song-bird's cheep. There is also a low, harsh cackle, as Fisher reports. The female may approach the excited male on the nest, bill with him and stroke his pouch with her bill, but he generally continues to shake his head and wings until she again flies away.

On one occasion a female alighted near a well-grown young bird who had been gaping and gazing skyward, anxiously and alone. The young bird uttered a squeaking sound and rubbed its bill against that of the adult. Eventually she opened her mouth and down her throat went the long bill of the youngster until the head disappeared, emerging again in due time; then the adult flew away and began soaring. Both Boobies and Frigate-birds feed their young in this way. Frigate-birds may be "tamed" if they are taken from the nest when young and are fed. They will remain near the source of food.

Conopoderas pistor (Tristram). In the less frequented parts of Fanning, as well as in the tropical jungles of Washington Island, dwells the little Kokikokiko, the only native land bird besides the Paroquet. It is found in association with the White Love-bird (*Leucanous alba kittlitzi*) and the Paraquet (*Vinis kühlili*), nesting and feeding in the tahuna trees (*Tournefortia argentea*). Hopping from branch to branch, flying only for a short distance, the bird is seen only by one's watching intently for it. It is of small size, and gray in color, with delicate, fluffy feathers, short black bill, and black feet and legs. The only markings are some black bars on the wings. The specimen hunter does not like to shoot this little warbler, it is so weak, so delicate, so very inquisitive and trusting. While it is hopping about picking up beetles, no sound is heard from it for long intervals; then a descending squeak, readily imitated with the lower lip against the upper teeth, may be uttered, and another bird may respond with a few chirps. Once when a pair was squeaking and chirping in some tahuna trees, I imitated the squeak. One of the Kokikokikos then hopped closer and closer towards me, twisting his head in every direction in an effort to find the "other bird", clinging with small, black feet to the branches or the bark of the trunk. Finding nothing, yet still hearing the call, he hopped to a branch not three feet away from me and peered around. Still, he paid little attention to me, only to the sound. In time he became discouraged and went off in another direction.

The nest is saucer-like, with a rather shallow bowl; it is made of grass and may have some intermingled leaves. It is placed in a crotch in a branch, ten to twenty feet above the ground. The stomach of one bird contained a large number of the elytra of a very small brown beetle, together with other parts of these insects. Evidently these constitute its chief food supply.

As already mentioned, *Conopoderas* is not uncommon at Washington Island. Streets makes no mention of it. On Christmas Island it is very abundant, and its nests are to be seen everywhere. It is said to devour the beetle (*Diocalandra taitensis*) which is responsible for some injury to the coconuts on these islands, but this is doubtful.

Vinis kühlü (Vigors). The small Paroquet forms a conspicuous part of the bird life of Fanning and Washington islands. At Fanning it is far less numerous than it once was. It occurs everywhere throughout the island among the coconut palms, but the natives capture the birds at every opportunity and attempt to keep them in cages, with the result that they soon die or at least fail to breed. Paroquets are very abundant in the coconut groves at Washington Island, where they are not so much molested.

Besides the birds here listed which breed on Fanning Island, there are several migratory species present on the extensive tidal flats and on the shores of the lagoon. The Bristle-thighed Curlew (*Phaeopus tahitiensis*) comes in large numbers in September and October from some boreal breeding ground and is mercilessly hunted on the flats with shot guns. Thus the numbers of migrants are being much reduced. There are some present at all times, probably individuals which were for some reason unable to continue the flight, or decided to stay there. They feed on the less disturbed flats during the day and take refuge among the rubbish in the coconut groves at night. The Wandering Tattler (*Heteroscelus incanous*) arrives about the same time from its breeding grounds in Alaska and frequents the lagoon shores, and the Pacific Golden Plover (*Pluvialis dominicus fulvus*) comes likewise and makes itself at home. Later in the fall there are several migratory ducks, but none of these were seen by me.

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Zoological Laboratory, University of California, Berkeley, California, February 9, 1925.

A REPORT ON THE BIRDS OF NORTHWESTERN ALASKA AND REGIONS ADJACENT TO BERING STRAIT. PART V

WITH THREE PHOTOS

By ALFRED M. BAILEY

HARLEQUIN DUCK. *Histrionicus histrionicus pacificus*.

These birds were recorded on but two occasions during 1921, once on St. Lawrence Island on June 28, when three birds were seen, and once in Providence Bay, Siberia, when seven birds swung so close I dropped a male. The first Harlequins noted at Cape Prince of Wales were seen along the ice-foot on May 28, where they were diving for food. Several bunches were observed on this date and a number of others on June 8 and 16. The Eskimos told me these birds were never common at Wales and I could get no information as to their breeding. These beautiful birds appear to best advantage when resting in flocks upon the ice floes, particularly if the waters are quiet and the clear snow has fallen upon the broken ice fields, giving a glistening contrast to the dark shadows of the shattered fragments.

STELLER EIDER. *Polysticta stelleri*.

A few of these ducks were seen at Emma Harbor, Siberia, during the first week in July, but it was not until we reached Whalen, near East Cape, that we saw them in any numbers. None was observed at St. Lawrence Island during the week that Hendee spent at that place. On July 11, Hendee and I went ashore and spent the day collecting at Whalen. It was one of the most disagreeable collecting days that I have ever spent. Hundreds of phalaropes and kittiwakes were about, but the northern gale blowing off the ice made extended work impossible. Very few ducks were seen, and none closely enough to identify, except the old-squaws which were constantly passing close overhead.

Whalen is built on a bar at the foot of a mountain, bounded by the Arctic Ocean in front and a large salt-water lagoon at the back, this narrow spit extending for miles until it joins the high land beyond. July 12 dawned bright and clear and at daybreak we were awakened by the popping of guns. We could see hundreds of eider over the village, with the Siberians dropping a few from every flock. Going ashore we enjoyed about as unusual collecting as one could experience, for eider ducks flew from the north, skirting the shore of the lagoon until they came to the bar, where they raised and passed above the village. It is impossible to give an estimate as to the number of birds, but there were flocks of them in sight all the time for several hours in the morning. All four species of eider were represented and the Steller in equal abundance with any.

When a flock of birds was sighted, instead of concealing themselves, the natives stood in plain sight and when the eiders were nearly overhead, they whistled and threw their bolos, which caused the birds to dive; then everyone in the near vicinity fired. At times a rain of ducks fell, often bounding high in the air when they struck a skin house. Of the birds flying, males were in the great majority, doubtless having left the females to rear the young. The natives told us that not many birds fly so late in the spring.

Dr. Nelson observed similar flights of these birds during his cruise on the *Corwin*, and remarked upon the fact that they did not become wary, probably because the natives were without firearms. Since then, however, probably for twenty years at least, the eiders have been shot as they passed daily to and from the sea, but still they continue to pass without seeming to grow more wary. The birds are still taken with bolos, as when Dr. Nelson visited the region, but it is usually the boys who handle them now, while the men use shotguns.

None of the Steller Eiders was observed until our arrival at Wainwright, when Hendee saw "rafts" of them along shore between the 7th and 11th of August, after which they were not so numerous. We noted them rather commonly all fall, however, taking considerable numbers of young birds and the females during the month of September, but they grew rare toward the end of the month. October 3, three birds were seen, and one on October 13. No males, except young, were taken in the fall months.

The first arrivals of the spring were on May 28, and a week later a number were in flight over the open leads. They were fairly common about the tundra ponds during June, but very few were nesting. One set of six eggs was secured on July 6, the nest being found on the shore of a shallow lake. It was a typical duck's nest, of dried



Fig. 55. NATIVES IN WHALING OOMIAK HUNTING EIDERS ALONG ICE FLOE.

grass lined with down. A heavy snow storm in July probably caused great damage to nesting birds, for many of the nests of different species, including one of the Steller Eider, were found deserted, and jaegers had destroyed the eggs.

At Cape Prince of Wales the first Steller Eiders were seen on May 12. At that time the Strait was still choked with the ice pack, and salt water froze in the leads. On May 18 and 19 a few birds were noted; but the big migration past this westernmost point was on June 3. We had been walrus hunting in the Strait for two days and were returning when the wind suddenly died and a calm prevailed, a very unusual occurrence. Immediately, great strings of birds appeared on their northward journey, gulls, loons, ducks and geese, and among them many of this eider. The natives said "When plenty birds come from south, then bime-by—mebbe one, two hours—we ketch south wind". It was true. The birds seemed to be going just ahead of the storm from the south. I learned to foretell a change in the wind by the migration of the

birds; for invariably a large migration occurred just before a south wind. We feared such a wind, for if caught offshore we could not sail back to Wales and would be forced to drift into the Arctic. Therefore the movements of the birds were watched with interest. A few of the Steller Eiders were seen about Wales all summer, but those I collected were non-breeding birds.

In 1924 our representative at Barrow, Charles Brower, secured several sets of eggs of this species, together with the nests and brooding birds. We find there is a considerable variation in color in the different sets, the eggs varying from light brownish to blue green.

SPECTACLED EIDER. *Arctonetta fischeri*.

This species is the least common of all the eiders, but we met it at several points enroute along the coast and saw portions of the skins used as ornaments by the natives. We collected three males in changing plumage, on July 12, at Whalen, and we were told that they were not rare at that place, but that it was too late in the year to find them. The Eskimos at Point Hope had ornaments made from the "spectacles", as did those at Wales and at Teller. At Point Barrow I secured five female birds from a bunch of eiders sent to the captain by Mr. Brower, and during August and the first half of September we saw, and collected a few more, females and their full-grown young.

These birds, when accompanied by the young, are very tame, or stupid, according to your point of view, and allowed us to approach within gunshot with scarcely any effort to evade us. The last of the species noted during the season of 1921 was on September 23.

They returned in the spring of 1922 with Steller Eiders, on May 28, and Hendee secured specimens during the first three weeks in June. The natives stated that comparatively few of either the Spectacled or Pacific eiders were taken, because the shore lead was closed during the time of their greatest migration, causing them to scatter over a wide area on their northward flight. A few birds were seen throughout July and August, and although the natives said that these birds usually nest about Wainwright in small numbers, we failed to find a nest.

I first noted Spectacled Eiders at Wales on May 16, 1922, when a pair swung close to our oomiak as we were hunting bearded seals. During the rest of the month a few pairs were seen and on June 3 a number were in migration, flying before a southerly storm. Many were also seen on June 23, showing the species has an extended migration. A few birds spend the summer in the vicinity of Wales, but the natives claim that they do not nest there.

I had been informed that Point Hope was a favorite resort of this species. The natives at Whalen told me that great numbers migrate northward each spring, and Captain Joe Barnard, whose boat was frozen in the ice at a point about thirty miles south of East Cape, informed me that there were literally thousands passing for several days during the spring of 1922. Inasmuch as comparatively few were seen at Wales, I have concluded that the greater part of these fine eiders spend the winter along the eastern Siberian shore and in the spring move northward to Bering Strait, to the vicinity of East Cape, where many cut across to Point Hope. From there they migrate on up the Alaskan coast, spreading out to their favorite breeding grounds. Nelson found these birds near the Yukon, and concluded that they would soon be extinct, due to their limited breeding range, but our experience does not justify this belief, for they not only breed as far north as Barrow and to the eastward, but are fairly common at Wainwright in migration. The fact that ornithologists must winter in the Arctic, and at a favorable place (preferably at one of the "Points"), in order to secure these

handsome birds in their high plumage, has made them rare in collections. They start molting soon after reaching their breeding grounds so that a collector has but a few weeks in which to secure full-plumaged birds.

Several sets of eggs of this species were secured for us at Point Barrow during the spring of 1923 and 1924. A male in light plumage, museum no. 8633, taken at Wainwright June 9, 1922, has a black V on the throat, as in the King and Pacific eiders, except lighter.

PACIFIC EIDER. *Somateria v-nigra*.

This is the commonest species south of Bering Strait in summer, according to our limited experience, for great flocks of them were seen along the edge of the ice on our cruise from King Island to St. Lawrence Island. Hendee noted them as abundant during the first two days of July and until the ice left, when the birds also took their departure. I saw them commonly at and in the vicinity of Emma Harbor, where a good series was collected. They are wonderfully beautiful birds and seem well-adapted to their surroundings, the white of their plumage showing cream-color in the bright glare of the Arctic sun, when contrasted with the blues and greens of the shadows of the ice upon which they are wont to perch. Flocks of them may be seen along the edge of a lead where they have climbed upon the ice, sitting huddled in the sun, while seals splash about in the open water just appearing through the rotting ice. A nest, doubtless of this species, was found by Mr. Burnham on July 5. It had been broken up by some animal. The ice had just left Emma Harbor and the sterile mountains were still covered with snow, especially in the valleys. Nature has to work fast in that region to accomplish her task in the short time allotted her—a brief two months of summer.

At Whalen we saw Pacific Eiders in great numbers crossing the bar over the village where the natives easily shot them, and a flock of about fifteen, apparently composed entirely of females, was noted at St. Michael on July 20. A few flocks were seen east of Barrow while we were enroute to Demarcation Point.

These birds proved scarce near Wainwright, few being seen all fall. We took a male, a bird of the year, on September 1, and did not see the species again until October 1, when several flocks were observed offshore. For the rest of the month they were seen more or less commonly, especially near the mouth of Wainwright Inlet where they associated with flocks of King Eiders. On our trip to Barrow, mentioned previously, from October 27 to 29, we saw a great many young birds, especially around the floating ice. When we were crossing the ice on Peard Bay on October 28, we saw several large flocks of eider ducks composed entirely of this species, so close that we were able easily to identify them. Our last record for the species was made November 18, when we collected a female.

The following spring the first examples of this species were seen on their northward journey at Wainwright on May 23, and a large movement took place on May 29. Specimens were collected between June 9 and 23, flocks often alighting on the tundra ponds at this time. Eggs were found on June 30 and downy young were collected on August 5.

They were noted over an open lead at Wales on May 5, and after that time a few birds were seen on our different hunting trips. A great many were in flight on June 3, in company with the other eiders, and especially large numbers passed the Point between June 10 and 16. This species breeds more or less commonly at Wales, making its nests along the shores of Lopp Lagoon, or on small islets in the tundra ponds. Fresh eggs were obtained between July 1 and 15. The nest is usually rather well made, of dried

grass lined with down plucked from the breast of the brooding bird. Pairs of non-nesting birds were often sitting about on the drifting ice, their large size and color making them conspicuous at a considerable distance.

KING EIDER. *Somateria spectabilis*.

This species of eider is common in Arctic Alaska. We noted it sparingly at Emma Harbor, Siberia, during the first week in July. I am told that it occurs in great numbers at St. Lawrence Bay. Captain Cochran told us that the enormous numbers we saw in flight at Whalen, near East Cape on July 12, could not compare with those seen at the former place on some of his earlier trips there and at the same season. At Whalen, King Eiders were numerous during the morning flight described in the notes on the Steller Eider, most of them being in breeding plumage, although beginning the post-nuptial molt. The natives preferred to shoot these birds rather than the smaller and faster flying Steller Eiders, both because they were easier marks and because they furnished more food. During the spring months great flocks of them pass Point Hope following along the open leads of water to their northern breeding grounds.

At Corwin coal mine, on August 3, we took three birds which were in the eclipse plumage and we noted a few while we were enroute to Barrow. The majority of the males had already departed for the south, leaving the females to attend to the domestic duties. During the southward flight, the latter part of June and July, the natives and whites of Barrow kill great numbers for winter food, the birds passing over a certain bar to the northward of the village in such numbers that hundreds can be killed in a day. The hunters conceal themselves and fire into the great flocks, killing many at each discharge.

A few flocks of eiders were seen daily on the trip to and from Demarcation Point, about the middle of August. We also found them fairly common throughout September at Wainwright where the females and young were often seen upon the inland lagoons before the freeze-up. Later, they were found on the salt water close to the beach. The first young birds which were able to fly were taken August 29. These, together with three young Spectacled Eiders, were on one of the inland ponds and allowed me to walk within gun-range without attempting to escape.

During the summer of 1920, the natives at Pinachugaruk, about thirty miles up the coast from Wainwright, found a great band of molting eiders and drove them ashore, where they killed about seven thousand. This band contained both King and Spectacled eiders, according to Allen, from whom I secured the information. Mr. Brower told me that the natives of Barrow killed two boat loads in that vicinity in a similar manner a couple of years ago.

The King Eiders were not so numerous during the month of October, many of them having moved to the southward. However, a few scattering bands could be seen almost any day of the month, as I have many notes of them during that period. During our trip to Barrow October 24 to 27, we saw them commonly along the shore where they fed about the great cakes of grounded ice, doubtless upon the shrimp which gather in the crannies of the ice. A male in high plumage was observed on the 27th. The last noted were two small flocks at Wainwright on November 9.

A native saw three King Eiders on April 15, 1922, at Wainwright, and more were seen on May 5. The first large flocks arrived on May 10, and on May 14 a large migration occurred, there being some flocks of thousands of individuals. They were common whenever the north wind stopped for a few hours. There was a continuous northeast wind for a few days, which prevented the birds from flying in numbers; but favorable weather prevailed from May 22 to 29, during which time the migration continued steadily, with great hordes massing over the openings through the ice pack.

During May Hendee reported that although many birds were killed, in no case did a mate drop from the flock to await a dead bird, but on June 2 and after that date, this was a common occurrence.

When I dropped down the coast by dog-sled, natives reported flocks offshore near Point Hope on March 21, 1922; at Wales they observed the first flock on April 6, showing that the birds work along the open leads, irrespective of weather conditions, for Point Hope is a considerable distance farther north than Wales. A few birds were seen at the latter place from April 20 on, and on May 5, they were abundant in their northern migration, great flocks following the open leads. The crews of three oomiaks took two hundred and fifty birds on this date. The birds fly in large flocks, often several hundred yards in width, and as a flock approaches, the Eskimos paddle their large skin boats directly in the path of the oncoming birds, shooting into the flock as it passes on either side. The birds show little fear and do not swerve from their course as do the fresh-water ducks. None was noted at Wales during the summer.

AMERICAN SCOTER. *Oidemia americana*.

These birds were not common in Bering Strait, a few individuals only being noted with the King Eiders on May 8. Several small bands were seen May 17 and a male was taken May 19.

DIXON WHITE-WINGED SCOTER. *Oidemia deglandi dixonii*.

We did not observe this species in the Arctic, but Brooks reports a few specimens from the vicinity of Demarcation Point; so they must round Barrow, unless making a long overland flight. Hendee reports the species as having been common at Unalaska during the latter part of September, 1922.

SURF SCOTER. *Oidemia perspicillata*.

Hendee obtained a male of this species at Wainwright on June 26, a northern record for the species. The natives had never observed one, so the individual taken must have been a straggler.

SNOW GOOSE. *Chen hyperboreus hyperboreus*.

We arrived too late in the season of 1921 to see many of these birds, the most of them being taken during the spring migration of 1922. Considerable numbers are killed by the natives in the vicinity of Barrow, as is attested by those we saw in the ice-cellars. Two birds were noted September 6 at Mil'katavik, near Wainwright.

Snow Geese arrived at Wales in large bands on May 31, 1922, while the tundra was still in its winter coat of snow. The migration continued June 1 and 2, and there were a few straggling flocks after that date. They followed along the coast, rounded Cape Prince of Wales, and cut to the northward, working along the high land. One or two bands occasionally alighted at a tundra pond. They were beautiful in flight, their white plumage being contrasted with their black primaries, as they circled against the blue of the Arctic sky. The snow-covered tundra was splotted with small, rainbow-colored ponds, and from far and near came the quavering, echoing calls of these geese, and the guttural cries of the Little Brown Cranes. Captain Joe Bernard told me that he saw hundreds of white geese crossing Bering Strait at that time, about thirty miles below East Cape, where they presumably spread out to their breeding grounds along the Siberian coast. Hendee reported the Snow Goose as rare at Wainwright; one specimen was taken June 12, and a flock observed June 26. We also saw a flock of twenty at St. Michael on September 1.

WHITE-FRONTED GOOSE. *Anser albifrons gambeli*.

Our only records for these birds in 1921 were made at Wainwright on August 22, when a flock of four was seen, and on August 25, when a dozen more were noted. Both flocks were feeding on the tundra.

Hendee took his first specimen the following spring on May 27, and they were observed plentifully after that date. A few pairs nested in the vicinity of Wainwright and two sets of eggs were secured, the first on July 12 and the second on July 25, both sets being of but three eggs. It seems evident that this species migrates overland across Seward Peninsula, instead of following the coast to their breeding grounds, for none was observed at Wales, westernmost Alaska.

White-fronted Geese breed rather abundantly along the large lakes inland from Point Barrow, and several sets of eggs with the nests and brooding birds were collected for us by our representatives in 1923 and 1924. There were from three to six eggs in the sets. These nests were of grass lined with down.

CACKLING GOOSE. *Branta canadensis minima*.

Three specimens, the only ones noted, were taken by Hendee at Wainwright on July 5, and these birds were the only representatives of the "Canada Goose" group which we observed, although the natives told me that they are common along the Serpentine and Lane rivers on the north side of the Seward Peninsula. Our record of Cackling Geese at Wainwright places this form far into the range of so-called *hutchinsi*. Had the larger specimen been taken alone, it might have been designated as *hutchinsi* (although it is almost uniformly dark above and below as a good *minima* should be), for the measurements agree more or less with those given for the larger form. The smaller birds agree with *minima* in measurements and are lighter-colored below, as the *hutchinsi* should be. The large dark-colored bird is a male, while the two smaller, lighter-colored ones are females. Below are the measurements in millimeters for the three specimens.

No. 8091 Male: Culmen 31; wing 406; tarsus 76; tail 128

No. 8090 Female: Culmen 29; wing 364; tarsus 63; tail 120

No. 8089 Female: Culmen 31; wing 360; tarsus 65; tail 123

BRANT. *Branta bernicla*.

The brant is included in our list on the strength of one specimen, a female, collected at Icy Cape, September 11, 1921; museum no. 8216. It appears to belong to the typical eastern form, with light belly and underparts strongly contrasted with the dark breast. The white of the neck is confined to a patch on each side of the neck, while the back is lighter than in the Black Brant. It is probable that the nesting grounds of *bernicla* and *nigricans* meet to the eastward of Barrow, with a few individuals of *bernicla* ranging down the northwest coast.

BLACK BRANT. *Branta nigricans*.

From the 20th of August until the last of that month, we saw a good many flocks of this species daily, all migrating well offshore on their southward journey. A few birds were taken in the vicinity of Wainwright the 1st and 2nd of September, but the majority of the migrating flocks kept well offshore. The natives of Barrow go to the lagoons near Peard Bay and shoot numbers of these birds, where they have a passage route to their feeding grounds. A similar feeding ground is located along the shores of the great lagoon near Icy Cape, some fifty miles to the south of Wainwright. Hendee and I accompanied Allen and a crew of natives in a whale boat, leaving Wainwright September 6, enroute for the cape. It was a blustery day with a head wind, but great strings of Brant were continually passing us, all flying low over the water. Bad weather prevented our making a trip to the feeding grounds, where this migrating horde stopped to feed before continuing south, until the tenth of the month; but, upon finally gaining our goal, our efforts were well repaid.

The lagoon is quite broad and shallow at its northern end, with banks of broken tundra some five to eight feet high along the lagoon proper, but considerably higher where arms extend into the mouths of some of the tundra rivers. Kelp, or seaweed,

is thrown upon the beach by the waves and the Brant congregate in such localities to feed. As we approached the northern end of the lagoon, we enjoyed a calm, and the low tundra shores seemed but blurred shadows on the horizon. Then the sun, filtering through a mantle of clouds, threw soft reflections upon the water, so that the whole bay looked more like a broad expanse of Louisiana lagoons than a bay gleaming under an Arctic sun.

The roar of black powder could be heard from ahead, and as each report came, muffled by distance, we saw great strings of birds rise in wavering lines, so dense and black that they looked like swarms of flies. The natives told us there were not many brant flying the past few days, but each family had several hundred birds tied out on racks, so that they must have had fair success.



Fig. 56. NATIVE CAMP WITH RACK OF BLACK BRANT; ICY CAPE, SEPTEMBER, 1921.

The Eskimos hunt by building blinds of turf in a favorable feeding spot, remaining hidden until a great band is massed sufficiently to make a real killing with a single shot. One of the boys of our party killed seventeen with two shots. The natives kill for food and cannot be blamed for being economical with their ammunition. Even a bird lover, after seeing the primitive way the Eskimos live, cannot censure them for shooting such numbers for food. I desired a good series of both adults and young birds, so took my choice of the kill. We were told to await a north wind if we really desired to see the brant in great numbers, but the lateness of the season made it necessary for us to return. When out one day, the wind suddenly shifted to the north and we then understood what the natives meant by "arra lik-lik" (plenty brant). The change in wind brought us a flurry of snow and lowering clouds, the chill wind making boating a disagreeable pastime. We encamped that night on an exposed gravel bar and scarcely had we started to make camp when the evening flight of brant commenced, our first

inkling being the faint "lik-lik" of the approaching birds, flying low and sweeping so close to the ground as they passed that one flock brushed our tent. We heard them flying late at night, and next morning, when the sun threw a faint light through the grim clouds, great flocks of brant hurried southward, now high in the air, as though sure of their landmarks. They looked black against the Arctic sky and made haste, as if to keep ahead of the scurrying clouds. The last brant of the season were taken at Wainwright on September 27, when we collected two young birds.

Hendee saw his first spring birds on May 24, and a few more were seen on May 29. On June 30, he saw large flocks flying south, in a fog close along the beach. Of the dozen specimens he collected none appear to have been breeding, but large flocks were seen all summer. The first of the fall migration began on August 15, when several large bands were seen flying southward out over the ocean.

The first Black Brant I saw at Cape Prince of Wales were in migration May 28, four days later than Hendee observed them at Wainwright. Grinnell (Birds of the Kotzebue Sound Region) reports them migrating past his winter camp on the Kowak on May 31, 1899, flying northeast. The fact that few birds were observed passing the cape leads me to believe that the Black Brant migrates overland across Seward Peninsula and on up the coast, rather than following along the shore the entire distance. A few bands were seen on June 3, but after that date none was observed in migration. A few individuals were noted near Wales in July, which were probably mere stragglers, as those collected proved to be non-breeding.

This species nests along the inland lakes back of Wainwright and Barrow, but we did not secure any eggs. Several sets, with the brooding birds, were collected for us about twenty miles inland from Barrow during the springs of 1923-24. The nests were of grass lined with down.

EMPEROR GOOSE. *Philaete canagica*.

At St. Lawrence Island Hendee observed the Emperor Goose daily the first week in July. He was working the north shore, which, according to the natives, is not a good locality for this species, the lagoons along the southern side being the main breeding ground. Some of the birds fed upon the tundra near Sivunga, where he obtained the one specimen he collected, a breeding female. The most of the birds which he observed were in flight, offshore. I saw seven birds near Kookuluk on June 28, and five the next day near Gambel Village.

This species is not rare at Cape Prince of Wales, and its range in that direction seems to be more extensive than has been previously reported. Rev. Thomas of Point Hope assures me that they are occasionally taken at that place; he recorded four birds on July 28, 1921, a few days previous to our visit. Mr. Dupertius, of the Bureau of Education, told me of seeing a specimen in an ice-cellar at Point Lay, 150 miles above Point Hope, in the spring of 1920. Dupertius spent two years at St. Lawrence Island and is thoroughly familiar with the species. St. Lawrence Island has been considered the center of abundance of the Emperor Goose, but from my experience I believe the southern shore of Kotzebue Sound to be their favorite breeding ground. The Eskimos reported the mouths of the Serpentine and Lane rivers as being a great breeding place, and I found the birds more or less abundant about Wales. They are strictly maritime, rearing their young along the salt-water lagoons and the tundra ponds adjacent to the coast. The first arrivals appeared at Wales on May 19, when two birds were seen; several were noted May 29, and after that date they were seen more or less frequently. As we returned from our hunting trips out in Bering Strait, we often found them in flocks resting upon the floating ice-cakes, or along the ragged, broken edges of the ice-foot.

Emperor Geese breed quite commonly along the shore of Lopp Lagoon; I secured my first set of eggs there on June 22. Nelson gives the first of June for the beginning of the nesting season at the mouth of the Yukon. The birds in the vicinity of Cape Prince of Wales averaged about two weeks later in nesting than the birds along the southern shore of Bering Sea. The nesting sites were usually along the shores of small ponds; the nests consisted of dried grass, well lined with down. When alarmed, the old bird flushes from the nest without taking the precaution of covering her eggs, but usually the eggs will be well concealed when the brooding bird leaves.

During the daytime, flocks of fifty or more often congregate, flying low along the shores of Lopp Lagoon, or feeding on the wide-stretching bars at the mouths of the various salt-water "rivers". When I took toll from these flocks, I invariably found I had a specimen with the breast partially picked, which seems to indicate that the birds off duty flocked together, with both sexes sharing in the incubation. We collected a good series of the eggs, the sets varying from three to eight eggs each. Nagozruk reported the Emperor Goose having young by the middle of July, during the summer of 1923, in the same region we worked together the previous season.

The Emperor Goose is not wild as I several times crawled within gun range of birds before they took wing. Their mating seems to be carried on in a quiet manner, a pair usually being seen feeding on the tundra, or resting quietly on a hummock, soon after their arrival. Nelson states that the male birds are pugnacious during the mating season, so it is probable those nesting near Wales were already mated at the time of their first appearance (although they migrate in flocks), for no particular courtship antics were noted.

WHISTLING SWAN. *Cygnus columbianus*.

Only one of these birds was observed in life during 1921, a single individual in flight over Cape Prince of Wales on July 30. A native killed one of a pair of birds near Wainwright Inlet August 26. The Eskimos say these birds are rare in the vicinity of Wainwright, although the herders occasionally find nesting birds.

Whistling Swans are not abundant in any given locality in Alaska, even in migration, but they have an extensive breeding range, from the mouth of the Yukon to the eastward of Point Barrow. Mr. Dupertius, of the Bureau of Education, showed me a photograph which he made of four downy young swans in their nest on St. Lawrence Island during the summer of 1922. He tells me the species breeds there regularly.

At Wales I saw swans rarely. The first was noted on June 5, when I witnessed as pleasing a performance as it has ever been my privilege to see. The tundra was still clothed in its winter coat of white, although pools of brilliant colors had formed here and there from the melting snow. It was in the height of the spring migration, with hundreds of Snow Geese, Little Brown Cranes and shore-birds in sight continually. Then, far out on the tundra, I heard a different note, a clamoring, quavering call, first full and loud, then gradually dying down. With the aid of the glasses I made out three swans, possibly two males performing for the benefit of a female. They walked about with arched necks proudly lifted, taking high steps with wings outstretched, two birds occasionally bowing to each other, and as they performed they kept continually calling. After a few moments in a given place, they took to wing and drifted across the tundra a hundred yards where the ceremony was repeated.

I saw only a few swans after June 5. While collecting near Mint River, which empties into Lopp Lagoon about twenty miles north of Cape Prince of Wales, I found a nest of this species with three downy young. It was early in the morning that we discovered it, on July 12. Both adults were seen sitting close to the edge of a pond and, as we approached, they flew majestically away, only to circle and sail back, directly

over our heads. The female was more stained than the male. There, near the water's edge, from where the parent birds had taken flight, were three beautiful, little, downy young which had just left the nest (some twenty-five feet away), doubtless ready to undertake their first swim. They were as fluffy as balls of yarn, with dark brown eyes, and bill and feet of flesh pink. They showed no fear and cuddled contentedly when we held them in our hands. The nest was a conspicuous, built-up mound of moss on a ridge overlooking the little lagoon, and was unlined with down. From the size of the young, it was evident that the swans made their nest on the first bit of bare



Fig. 57. YOUNG WHISTLING SWANS IN THEIR NEST; MINT RIVER, JULY 12, 1922.

tundra. The swans are probably among the earliest birds to nest in the vicinity of Wales, the geese eggs being but half incubated at this time, while the loon eggs were still fresh.

The Whistling Swans owe their present day numbers to the fact that they nest over a wide stretch of barren country, uninhabited even by natives. They are continually persecuted on their breeding grounds and were it not for their habit of nesting early, when the snow is deep and too soft for traveling, they would have been exterminated long ago.

Denver, Colorado, January 12, 1925.

FROM FIELD AND STUDY

Observations on the Spotted Sandpiper.—Mr. A. J. van Rossem's paper in the April *Auk* (XLII, 1925, p. 230) under this title is opportune in drawing attention to the practice of so many non-collecting observers in ascribing the female sex to the most solicitous individual of a nesting pair. In the case of the Spotted Sandpiper (*Actitis macularia*), many published photographs of the sitting "female" are, obviously, from the more sparsely spotted breast, of the male bird. The following corroborative incident will illustrate how little the female has to do with the raising of the young.

One day in late July, 1919, wishing to make some life studies of the downy young of this species, I spent about an hour watching a male bird which I knew had recently hatched young. During the whole period the female remained indifferent, some hundred yards away. Finally locating two young birds, I confined them in a deep basket while I drew them. The male fluttered nearby in an agony of solicitude, and his cries attracted the attention of a migrating male which joined him and was almost as excited and solicitous as the actual parent. Not till then did the female join the group, and her actions were solely to attract the attention of the males. Puffing out her breast she ran from one to the other of the distracted males, stretching herself to her utmost height and uttering her courting trill, perfectly indifferent to the peepings of her offspring. It is probable that the reversal of the sexual duties in the Scolopacidae is much more prevalent than at present assumed to be, especially where the female is notably larger than the male.

At the present time, the middle of July, migrating Spotted Sandpipers in one's and two's are passing along the shores of Okanagan Lake. Nearly all are adult females, which have probably abandoned their spouses to the upbringing of their broods. The species in the more open portions of this region is reduced to about one-fifth of its former abundance, solely due to the depredations of Crows and Magpies. My friend Mr. C. deB. Green lives on a small lake admirably adapted to the Sandpiper's requirements; under the date of May 28 he writes me: "Practically all the Spotted Sandpipers left this lake after the Crow persecution. I see one solitary bird this year to date, and there used to be fifteen pairs on my lake alone. Three times last year I saw Crows capture large-sized young and tear them to pieces before the eyes of the screaming parents."—ALLAN BROOKS, *Okanagan Landing, British Columbia, July 17, 1925.*

Lewis Woodpecker Abundant in Napa County, California.—In Pope Valley and for a distance of several miles along Putah Creek, in Napa County, Lewis Woodpeckers (*Asyndesmus lewisi*) were present in very large numbers on March 28 and 29, 1925. We drove to the ranch of Mr. A. A. Shupp, about three miles beyond Pope Valley, in the afternoon of the 27th, going by way of Rutherford and Chiles. The 28th was spent on and in the vicinity of the Shupp ranch. While the weather was generally unfavorable for both birds and observer, being cold and rather windy, with occasional rains, Lewis Woodpeckers were everywhere in numbers. By actual count as many as twelve birds were in sight at one time. The country is well wooded and near the mountains. There are orchards and cleared fields near the highway in the flat land. In the fields there are many large oaks. Even in the meadows and fields, where Western Meadowlarks were present, they did not exceed in numbers the Lewis Woodpeckers in the trees. Meadowlarks alone compared with the woodpeckers in numbers, and then only in the more open places. Woodpeckers equalled all other observed birds combined, excepting meadowlarks, and taking in the whole terrain far exceeded the meadowlarks. Our friends on the Shupp ranch had arrived there about the middle of February. They said these birds had been present in about the same quantity ever since. While Lewis Woodpeckers are not rare in any part of California, they are generally a more northern species and I had not expected to find them abundant, even profuse, in central California. But here they were the predominant species. Their presence everywhere gave a very good opportunity to learn something about them.

Lewis Woodpeckers are easily identified in the field by readily recognized and conspicuous diagnostic features: large size, solid dark green back, gray collar and throat, pinkish breast, long dark bill and short tail. As soon as a few were identified and observed no one could mistake the others. They do not always perch vertically

on a limb or trunk but quite as often sit horizontally on the smaller branches, often at the top of the tree, and there remain motionless for considerable periods, after the manner of the Sparrow Hawk. The flight is crow-like. Near the ranch house there was a fence post, with a shallow notch in the flat top. This these birds used for opening acorns, which were fitted into the notch and opened with the bill. At almost any time a bird could be seen at this business, which evidently had been going on for a considerable time, because the ground about the post was covered with empty acorn shells. The top of the post was invariably left quite clean and free from shells, except when a bird was disturbed and forced away before the meal was finished and the table cleared. The use of this crevice or notch to secure acorns while being opened, suggests one of the reasons for the habit of the California Woodpecker, of placing acorns and nuts in holes drilled in wood and bark of trees. At least it is one of the advantages secured.

No evidence of nesting was found, but the birds were often seen in pairs and some of them probably breed in this region.—CLAUDE GIGNOUX, *Berkeley, California, April 8, 1925.*

Western Martin Colonies.—In the CONDOR for September, 1924, p. 195, Dr. H. C. Bryant mentions certain cities in which the Western Martin (*Progne subis hesperia*) colonizes. I should like to add the two colonies found at Santa Barbara and Balboa, respectively. The latter colony originated in 1919 with one pair of birds, according to J. P. Greeley, secretary of the Newport Bay Investment Company. The birds nested in the large boat-house and pavilion owned by this company, and from the first were given protection. English Sparrows and Linnets have been discouraged from nesting by the Company, and boys and others warned of molesting the martins. Early in July of 1920 I, personally, first discovered the martins there. Since then I have kept track of them and have found the colony increasing each year in number of breeding pairs. In July, 1924, there were fourteen nests. It is interesting to note that the nests are located on rafters over the boat slips, some of them being directly over water. The feeding parents do a good deal of their hunting over the waters of Newport Bay. The trash and "sweepings" cast out from the nests, especially in early mornings, make quite a litter on the dock, and consist mostly of the wings of dragon flies, damsel flies and some lepidoptera. The excreta seem to be carried away from the vicinity.

Dr. Bryant recalls a single pair of birds on Mt. Wilson; that colony also has thrived and is most vigorous and noisy in the breeding season, being one of the conspicuous features of the top of Mt. Wilson.

William L. and Irene Finley (Condor, xxvi, 1924, p. 7) ask if anyone has seen Western Martins nesting in bird houses. A friend informs me that in Sierra County, California, a colony nested in a bird box on the roof of the ranch barn, and did so for years. In the CONDOR for March, 1919, page 76, a colony is reported as nesting in the center of a town in bird boxes.

Believing with the Finleys that Western Martins will eventually adopt artificial nesting cavities, I assisted the Park Department of the City of Pasadena, California, in planning and locating a martin house. The local colony is at present nesting in the cornice of the Security Bank Building and we sought to place the house, for the sake of gaining success for the experiment, on the roof of the same building. Neither the Board of Directors of this nor of any other nearby down-town building would accept our donation for a sky-piece, basing their objections variously: unsightliness, wind-hazard, insurance, vermin and botheration. The house has lost a year's trial in the meantime, but is going up in Central Park in time for 1925 inspection. We feel that our chances for success are much lessened by the removal of three blocks from the selected haunts. The house follows government specifications, is equipped for lowering and inspection, but has not the sparrow trap-doors.—ROLAND CASE ROSS, *Dept. of Nature Study, Los Angeles City Schools, May 10, 1925.*

Pigmy Owl Killing a Quail.—Meeting Mr. Bentley of the forest service at the Portal Ranger Station, Chiricahua Mountains, on the afternoon of January 21, he informed me that on the previous evening he had been attracted by a commotion on the hillside nearby and upon investigation he had found a female Gambel Quail grasped by the

neck with both sets of claws by a small owl, the quail still warm. The owl, made captive with a loop of string, proved to be *Glaucidium gnoma pinicola*.—H. H. KIMBALL, *Paradise, Arizona, March 27, 1925.*

Unusual Notes of Texas Nighthawk.—During the summer of 1923, I was engaged in field work in southern Arizona. During June I occasionally camped out in the sahuaro groves south of Phoenix, and was up before daybreak to try and observe nocturnal species. Toward the end of the month, at this time of day, I several times heard a loud ringing whistle—"whee-eeep'-poor-will". The notes were not at all like those of the Whip-poor-will, which are repressed and muffled by comparison. As a matter of fact, my only theory was that it might be an odd note of an Elf Owl. Later I began to think perhaps it was the Arizona Crested Flycatcher. I knew Texas Nighthawks were common there, and their peculiar bubbling notes (resembling the Screech Owl's) were much in evidence at this time of day, but I did not connect them, then, with this call.

During the same time of year in 1924, I was doing some rather intensive field work in the lower Rio Grande Valley, around Brownsville, Texas, and Matamoros, Mexico, as the guest of Mr. R. D. Camp, who is game warden in that territory and in charge of the collecting of material for the Texas State Museum. I was able to help him a little in collecting Caprimulgidae, and we had good opportunity to study the species of that region, including the Merrill Parauque, Texas Nighthawk, and Aserri Nighthawk. Here again I heard the same wild, ringing cry of "whee-eeep'-poor-will". Mr. Camp said it was the Texas Nighthawk (*Chordeiles acutipennis texensis*), and sure enough, on further investigation such seemed indeed to be the case. At least, the bird we saw making the noise was certainly a nighthawk, and while the Aserri occurred in the same flock it did not occur in Arizona. Both Mr. Camp and myself were confident it was the Texas Nighthawk uttering this cry.—M. W. DELAUBENFELS, *Pasadena, California, March 29, 1925.*

The Second Occurrence of the Louisiana Heron in California.—In the late afternoon of March 22, 1925, while collecting specimens for the Natural History Museum, Balboa Park, San Diego, I chanced to spy a peculiar-looking heron of slender stature, standing in the middle of a wide slough where the Sweetwater River enters San Diego Bay. As the tide was low and the bottom of the channel was exposed, dozens of shore-birds were feeding all about the heron, and, as there was no cover, I had but little hope of successfully approaching it. However, by slow, steady walking, I was able to get within easy gun range, in spite of the warning calls and timely departure of a greater part of the waders, and I shot the heron as it flushed. A knee-deep wade through black, odorous mud brought me to a fine adult female specimen of the Louisiana Heron (*Hydranassa tricolor ruficollis*) and it is now no. 9788 in the collection of the San Diego Society of Natural History.—LAURENCE M. HUEY, *Natural History Museum, Balboa Park, San Diego, California, April 25, 1925.*

Purple Gallinule in Utah.—

Ionornis martinica. Purple Gallinule. On November 23, 1924, a female bird was seen at Haynes Lake, Salt Lake County, about twelve miles southwest of Salt Lake City. The bird was in the rushes bordering the lake and was noticed when it flew a short distance to another part of the shore. No others were seen, but this one was taken and definitely identified. So far as we know this is the only time the Purple Gallinule has been found in Utah. The weather was cold and there was some snow on the ground, but the bird was active and well nourished. We do not know why or how it came here.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. At the mouth of the Bear River, Boxelder County, Utah, June 4, 1922, a Yellow-headed Blackbird's nest was found with one pure white egg. Three days later the nest contained four white eggs. The bird was flushed at each visit and definitely identified. In the same locality were many other nests of the same species.—JOHN W. SUGDEN, *Salt Lake City, Utah, June 3, 1925.*

First Record of the White-faced Glossy Ibis in Washington.—I have succeeded in locating one of the White-faced Glossy Ibises (*Plegadis guarauna*) previously mentioned in the Condor (xxvii, 1925, p. 73); it has been purchased and is now in the Public Museum of this city. This is an immature bird, shot at Clear Lake, two miles south of Medical Lake, Spokane County, about October 30, 1909, by P. J. Thelen of Medical Lake, who writes me that the bird was alone. I have a note from J. Hooper Bowles of Tacoma, stating that "it is probable that these birds have an occasional fall migration similar to that of the California Brown Pelican and Fulvous Tree-duck; most of the northern stragglers of these species are immature. The capture of this ibis constitutes the first state record for the species."—J. L. SLOANAKER, *Spokane, Washington, June 4, 1925.*

The Cardinal in Southern California.—On the morning of October 19, 1924, Mrs. Henderson and I went to a favorite place to see birds. We were sauntering along slowly when we heard the call of a bird we knew, yet dared not hope for. Suddenly from out the thicket a flash of red appeared and the bird alighted on a branch not fifty feet away.

We knew at once it was a Cardinal (*Cardinalis cardinalis*). Feasting our eyes for perhaps a minute, he then flew out of sight. We said little about the incident, but on October 26 we went again to the same place. In a few minutes the bird appeared and remained in plain sight for perhaps ten minutes. We could see that the black ring around the bill came together, supporting our belief that we had seen the Eastern Cardinal.

On November 3, Mrs. Bicknell, ex-president of the Los Angeles Audubon Society, Mrs. Mix, Mr. Grebe, Mr. and Mrs. E. J. Saunders, Mrs. J. P. Underwood, Mrs. Henderson and myself, all went to see the new arrival. He soon appeared and, as before, stayed in plain sight for perhaps ten minutes. We saw him next on November 24. I made several trips subsequently, but did not see him again until March 2, when Mrs. Henderson and I saw one and heard two others singing. A rancher said he had seen several feeding with his chickens for three or four years. On March 22, Mrs. Henderson and I for the first time saw the female in company with her mate. On March 30 the Los Angeles and Whittier people saw two males and two females near the same place. On April 5 I saw a female gathering nesting material and placing it in a nest, the male cheering her with his wonderful song. On April 20, Mr. L. E. Wyman, Mrs. Bicknell, Mrs. Hall, Mr. Grebe, Mr. and Mrs. Saunders, Mrs. Underwood, Mrs. Henderson and I went out to see the nest. Mr. Wyman felt in the nest and found three eggs; he took one out and showed it to the others.

On May 2, Mrs. Henderson and I again visited the nest and found three young, about four days old, but on May 10 when we went to the nest we found it vacated. I do not know whether the young arrived at maturity or not. Numerous reports have reached us in the meantime of Cardinals in and around Los Angeles, but none has been confirmed. Should they be definitely located please notify L. E. Wyman at the Los Angeles Museum, Exposition Park, or myself.—H. N. HENDERSON, *Whittier, California, July 28, 1925.*

Three Noteworthy Records for British Columbia.—The following are three recent records made at Okanagan Landing, British Columbia, the first two being the first for their species for the region.

Larus hyperboreus. Glaucous Gull. On April 8, 1924, I took an immature female of this gull in the nearly pure white plumage of the second year. It is of the small type ("barrovianus") to which probably belong all the recent records accredited to *Larus leucopterus* for the Pacific region. Length (in the flesh), 615 millimeters; wing, 421; culmen, 52; depth at angle, 20. Colors of soft parts: iris, straw color; bill, livid white, tinged yellow on culmen, and with a subterminal bar of brownish; feet, rosy flesh.

Spizella pallida. Clay-colored Sparrow. On June 5, 1925, I took a male in breeding condition on the bench-land just behind the village of Okanagan Landing. This is a characteristic type of habitat for the species, but probably my bird was only an extralimital migrant. This is the first record for the province since I took two singing males at the 158-mile house, Cariboo district, July 3, 1901; at the time, they were erroneously ascribed to *Spizella breweri* (Auk, xx, 1903, p. 283).

Oreoscoptes montanus. Sage Thrasher. A pair of Sage Thrashers are this year breeding within a mile of the village of Okanagan Landing, an extension northward of some 75 miles from their nearest colony (White Lake, Osoyoos district). The locality which they have chosen is void of sage-brush and their nest must be in a rank growth of the weed known as "tumbling mustard."—ALLAN BROOKS, Okanagan Landing, British Columbia, July 16, 1925.

A Note on the Fanning Island Warbler.—The Fanning Island Warbler (a member of the Family *Sylviidae*) seems to have been first recorded by Dr. Thomas H. Streets, who, in the *American Naturalist* for 1877, p. 69, after giving an account of the native parrot of this group of islands, remarks: "The only other land bird found on Washington Island belonged to the *Passeres*. It was a fly-catcher-like bird. As many of these as were seen were procured." The specimens mentioned were lost, according to Streets, in some unaccountable way after their arrival at the Smithsonian Institution in Washington, and no mention is made of the species in Bulletin 7 of the U. S. National Museum, published in 1877, in which is given a complete account of the specimens secured by the expedition in question.

In the *Ibis* for 1883, page 44 (plate 2), Tristram recorded a similar bird from Fanning Island, and named it *Acrocephalus pistior*. In the catalog of Tristram's collection published in 1889 (page 152) the types for this species are listed as two specimens, male and female, taken on Fanning Island in 1881 by T. V. Arundel.

During work in the Fanning Group in 1924, Mr. Harold Kirby, Jr., collecting for the Museum of Vertebrate Zoology, secured two skins of this rare species, now, through a division of the genus *Acrocephalus*, known as *Conopoderas pistior* (Tristram), which have been sent to me for examination. I have seen one other specimen, one taken on Fanning Island by Dr. S. C. Ball for the Bishop Museum of Honolulu. The two collected by Mr. Kirby bear the following data: female, Fanning Island, June 23, 1924, and male, Washington Island, summer, 1924. Both seem to be adult. The first mentioned, in fresh feather, with molt not quite completed, measures as follows: wing 77.3 mm., tail 62.7, culmen from base 17.8, tarsus 29.2; the second, in slightly worn plumage, has the wing 76.8, tail 60.0, tarsus 28.0 (culmen broken so that length of bill may not be taken).

These two skins agree in color with Tristram's original description and plate. The skin from Fanning has extensive whitish margins on the wing feathers, whitish tips on the rectrices, and whitish to pale olive buff tips on feathers of back, hindneck and crown. In the bird from Washington Island the pale margins on the dorsal plumage are much more restricted, and the bill appears more slender. Apparent difference in color may be due to season, as the plumage is somewhat worn. Birds from the two islands are treated here as identical though in view of the extensive subspecific, as well as individual, variation found in the genus in other island areas, notably the Tuamotu Group, it will be well for anyone with suitable opportunity to secure small series from each of the two islands in question for more critical comparison than the scanty material at hand permits.

Conopoderas pistior in its gray coloration differs rather decidedly from any of its congeners, which, as a rule, are more warmly colored, and it carries to an extreme in this direction a tendency found somewhat indicated in the browner, buffier *C. kingi* Wetmore of Nihoa Island, and the extinct *C. familiaris* (Rothschild) of Laysan.

Mr. H. S. Swarth has called my attention to the name *Tartare arundeli* applied to a warbler of this group in a curious work by Emmanuel Rougier entitled, "Ile Christmas South Seas (Océanie) Coconuts, Birds, Fishes, etc.," printed in 1914 by L. Watel, Brioude. This name, which occurs on page 140, is a nomen nudum, and refers to the warbler of Christmas Island, south of the Fanning Group, a bird known properly as *Conopoderas acuinotialis* (Latham).—ALEXANDER WETMORE, U. S. National Museum, Washington, D. C., June 4, 1925.

EDITORIAL NOTES AND NEWS

We often see in the local press reference to some person as "the authority" on the birds of a state or of a region. The word authority confers certain blandishments, attractive to the conferee in a way, and acceptable to the newspaper reading public. But rarely now-a-days is the word really applicable. As a matter of fact, ornithologists who are accomplished, if not in the field at large, then in some segment of it, are numerous. In a state like California, "authority" is vested in no single individual or even in a few persons. For a summation of ornithological knowledge, relative to our state, appeal would have to be made to each of a score or more. For example, we would seek information as to the nesting of the birds of California generally, first of all from a person we will call C, though his name rarely appears in print, more's the pity. In regard to the nesting of certain Sierran birds we would appeal to R; and so on, as regards oology, for many districts. As to the songs and call-notes of difficult species we would ask H. For facts and interpretations as to bird behavior we would ask of L. Regional and seasonal occurrence of species is the special knowledge of a number of persons, among them M, T and W. As to the systematic status of birds in certain groups we would enquire of S, and in certain other groups, of V. When it should come to historical and biographical matters we would most certainly appeal to P. And as to birds of past time we would seek information of M. And so on. Thus, orderly knowledge, in a general large field like ornithology, has become so extended that it can be the possession of no one person. "Authority" in ornithology is now vested in the many.

Mr. P. A. Taverner, Ornithologist for the Canadian Geological Survey, is carrying on field work in Saskatchewan, Canada. Early in the fall, when he is through there, he will proceed to the Pacific Coast, making a tour of the country from British Columbia to southern California, before returning to his headquarters in Ottawa. We understand that Taverner's "Birds of Western Canada," illustrated profusely with colored drawings by Major Brooks, is about ready to appear from the press.

Californians have invaded San Salvador. Two collectors representing Mr. Donald R. Dickey's interests are at work there upon birds and mammals, namely, Mr. Adriaan van Rossem and Mr. R. A. Stirton. Also, Dr. Loye Miller and Alden Miller are there, collecting skeletons of birds to use in comparisons with fossil material from California. Interestingly, several types of birds were present in Pleistocene times in California which are now restricted to Central and South America.

We heartily recommend that all who are interested in the conservation of wild life read carefully a little book which has recently been published in London. It is by Lewis R. W. Loyd and is entitled, "The Protection of Birds—an Indictment" (Longmans Green and Company, 1924). No matter what preconceived ideas the reader may have with respect to the proper use by mankind of bird life—the absolute prohibition of destruction under any circumstances, on the one hand, as against a certain measure of freedom on the part of collectors and sportsmen under reasonable control—he will find in Captain Loyd's book much food for reflection.

Attention of bird banders is called to the surprisingly large list, on the outside of the back cover of this issue, of birds banded in the Western Province during the period from March 1, 1924, to February 28, 1925. A total of 96 species and 9995 individual birds received bands.

PUBLICATIONS REVIEWED

LIFE HISTORIES OF NORTH AMERICAN WILD FOWL. ORDER ANSERES (PART). By ARTHUR CLEVELAND BENT. United States National Museum, Bulletin 130, x + 376 pp., 60 pls.; 1925 (our copy received August 4).

In this volume, the fifth of the series, the author concludes his accounts of the order Anseres, covering certain of the diving ducks, the geese and the swans. General manner of treatment is essentially the same as in the preceding parts of the work (see Condor, xxii, 1920, p. 45; xxv, 1923, pp. 25, 35), and, as before, there is a liberal allotment of well selected illustrations to supplement the text.

To all appearances Mr. Bent has been most thorough in his assembling of known facts, and his compilation of the scattered contributions of other observers is supplemented to no small degree by original matter of his own. His "Life Histories" are volumes to be eagerly anticipated and to be kept for handy reference by everyone interested in birds. The pity is that the series can not be pushed to completion within a reasonably short time.

In the nomenclature used, there are various departures from the rulings of the A. O. U. Committee, which I still regard as an unfortunate attitude (see Condor, xxv, 1925, p. 35). The problem of the true relationships of the several forms of *Branta canadensis* is mentioned, but not discussed at any length. A real contribution to this subject is found in Mr. Bent's statement of the similarity of the downy young of *Branta canadensis occidentalis* and *B. c. minima*, and their dissimilarity from the same stage in *B. c. canadensis*.

In the two volumes covering the Anseres the plates are segregated at the back of the books; in the preceding volumes they are scattered through the text, a preferable procedure, to my notion. It is always a nuisance to leave reading matter in order to search for a distant illustration.

There is a detail in the manner of publication of the "Life Histories" that arouses one's curiosity. The several volumes are each issued as separate "Bulletins" of the United States National Museum, even though two of the volumes (as those dealing with the Anseres) are indicated as "parts" and bear the same title. In the exactly similar case of Ridgway's "Birds of North and Middle America", a long series of volumes issued through the years, each appears as a separate part of "Bulletin 50". One wonders at the different treatment.—H. S. SWARTH.

TOWNSEND'S "SAND DUNES AND SALT MARSHES".*—This book is a happy combination of correct literature and good natural history. It reminds us in these respects of Bradford Torrey's "Field Days in California", therefore to be read by a fellow naturalist with mental comfort and with appreciative interest. The local setting is in the neighborhood of Ipswich,

Massachusetts; but the painstaking observations recorded and logical inferences made can most of them be verified in many another part of North America. Dr. Townsend's book, in our estimation, deserves to be placed on the rather short list of "best books" on American natural history and therefore should be read widely. We can, of course, cite here only samples of the very many points made by the author that strike us as of real scientific merit. Skipping over, then, a great deal of very attractive matter concerning the behavior of sand-dunes and of their avian and other living inhabitants, we select the following paragraphs for quotation, from the last chapter, which is entitled "Bird Genealogy".

"Scratch a bird and you will find a reptile, can be said as truly as the similar trite remark concerning civilized man and savage, with the difference that one must scratch much more deeply in the case of the bird.

"The English sparrow, although fond of bathing in mud puddles, like all street gamins, would never be mistaken for a water bird, yet in its early infancy it is a capital swimmer, as I discovered in a perfectly innocent and excusable manner. Having occasion to shut an outside blind in my city house, I found that I had torn down a huge nest of street bric-a-brac that English sparrows had built between it and the wall. Two young had fallen to the ground below and were pounced on by a dog, two others—fat, misshapen things, mostly stomach and devoid of all but the black lines of incipient feathers—remained on my hands. As I could not rebuild their nest, and as I was entirely unprepared to furnish them with properly modified food, and, moreover, as a lover of native birds and a sworn enemy of these avian rats, I was bound to destroy them, I cast about for a method which would least disturb my peace of mind, for I did not think they would much care, being so infantile and inexperienced. I therefore dropped them into a basin of tepid water, expecting the inert masses to sink, or at least that their wobbly heads would fall below the surface. But presto-change! the creatures at once became endowed with life and vigor as if upon their native heath once more, and, with a combination of rapid wing-strokes and leg action and with necks out-stretched, they scudded across the surface of the miniature pond. They could not have done it better if they had tried, and I do not imagine they tried at all, but that the

* Sand Dunes | and | Salt Marshes | by | Charles Wendell Townsend | [4 lines] | New Edition | With an Introduction by | Ralph Hoffmann | And numerous Illustrations from Photographs | [seal] | Boston | L. C. Page & Company | Publishers. | | "New Edition, April, 1925": pp. 10 + (1)—311, frontispiece + 98 other halftone illustrations on inserted plate paper, usually on both sides. \$3.50.

action was reflex and instinctive,—entirely willy-nilly on their part.

"Blood will out, the crocodile ancestry was working. To make sure that this was not an accident, with malice aforethought, I dropped a young red-winged blackbird into the pool below his nest. He, too, performed in exactly the same manner, and safely reached some reeds, up which he scrambled, and was there well taken care of by his excited parents. It is probable that many a passerine bird, nesting over the water, has been thus saved from destruction by this return to primitive methods.

"Further experimentation showed me that very young birds generally moved the wings alternately, while older ones always flapped both wings together as in flight. From this one would infer that the primitive reptilian scramble was naturally an alternate method, while the simultaneous method was simply the more advanced style used in flight. . . ."

"I recently placed a half-grown domestic pigeon in a wash tub of tepid water. With head and neck erect the bird swam with rapid alternate strokes of the feet to the side of the tub. The wings were arched up and waved slightly,—not stretched out and flapped in the water, as in the case of the sparrow. Its position was like that of a duck but low in the water, which was due, no doubt, to its well-filled crop and its lack of buoyant feathers. Progress was much more rapid than on land, where the bird stumbled awkwardly along,—indeed it had never before left the nest."

Thus, Dr. Townsend's homely observations continually bring out materials for the liveliest sort of philosophizing. The environs of most anyone's home city will provide the active seeker and interpreter with an exhaustless supply of equally fresh natural history—"new to science" in large measure.—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, July 21, 1925.*

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

MAY.—The Cooper Ornithological Club, Southern Division, held its regular monthly meeting Sunday, May 31, 1925, at "Las Leyes", the delightful home of Mr. and Mrs. J. Eugene Law in Altadena. About thirty-five members and friends were present to enjoy Mr. and Mrs. Law's hospitality.

The meeting was called to order by President Wyman, and minutes of the April meeting were read and approved. April minutes of the Northern Division were read by title only.

The following names were proposed for membership: Paul F. Covel, 4350 Cleveland Ave., San Diego, Calif., by Clinton G. Abbott; Oliver Ames Lothrop, M. D., 101 Beacon St., Boston, Mass., by W. Lee Chambers; Mrs. Mabel C. McVitty, 1272 Summit Ave., Pasadena, Calif., by Mrs. Myrtle S. Edwards; Miss Louisa P. Merritt, P. O. Box 315, Pasadena, Calif., by Mrs. Myrtle S. Edwards; Florence C. Mull (Mrs. Bert F.), Foothill Blvd., Glendora, Calif., by J. Eugene Law; Mrs. Oliver S. Ormsley, 5658 Blackstone Ave., Chicago, Ill., by W. Lee Chambers; Laurence B. Potter, Gower Ranch, Eastend, Sask., by W. Lee Chambers; William Richardson, care of Walter L. Richardson, R. F. D. 3, Box 243, Porterville, Calif., by J. Eugene Law; Miss Elsey R. Taft, Banning, Calif., by Roland C. Ross.

The secretary was in receipt of a letter from Dr. C. O. Esterly signifying his willingness to act, as requested, as representative of the Southern Division at the Portland meeting of the Pacific Division of the American Association for the Advancement of Science next month.

Mr. Chambers raised the question of making a change in the regular meeting night of the Club, as a number of prominent members are unable to attend on Thursday evenings. His motion that a committee of three be appointed to investigate and see if some evening more generally convenient could be determined upon, was seconded by Dr. Bishop and duly carried, whereupon Mr. Wyman appointed Mr. Chambers as chairman to act with Mr. Law and Mr. Allen on such committee.

Two communications were read by Dr. Bishop; one a request for contributions to the Ernest Harold Baynes Memorial fund, the other from the New England Bird Banding Association, calling attention to the probability of the total extinction, in the near future, of the Heath Hen, if some active measures are not taken to save this bird.

Miss Miller told of a Screech Owl having been seen on several different days to frequent the bird bath in her yard, and asked for an explanation of its uncommon behavior. Mr. Law suggested the presence of mites on the bird as a possible reason for its unusual desire for bathing. Mrs. Edwards reported the finding of a Night-

hawk's nest, containing two eggs, and the later hatching of the young, near her home in Altadena.

After adjournment the members enjoyed the refreshments served by their hostess.—ELLA H. ELLIS, *Secretary*.

JUNE.—The Southern Division of the Cooper Ornithological Club held its regular monthly meeting at the Los Angeles Museum, Exposition Park, June 25, 1925, at 8 P. M. with the following members present: Miss Potter; Mesdames Ellis, Martz, Mitchell, Reis, Schneider; Messrs. Appleton, Barnes, Michener, Nokes, Reis, Rich and Robertson. In the absence of the president and vice-president, Mr. Howard Robertson was requested to call the meeting to order and was elected chairman for the evening. Minutes of the May meeting were read and approved, also May minutes of the Northern Division.

Mr. Robertson announced that Dr. Bryan is preparing to have a formal opening of the new wing of the Los Angeles Museum the first of November, and as the Cooper Club has been for so many years a part of the institution, he felt it fitting that the Southern Division show its interest by an offer of assistance to Dr. Bryan. He appointed the following as a committee to confer with Dr. Bryan: Mrs. G. H. Schneider, Mrs. Ella H. Ellis, Dr. L. B. Bishop, Mr. J. Eugene Law, and Dr. Guy C. Rich.

Mr. Reis told of a recent collecting trip in the San Joaquin Valley, also in the High Sierras, and gave his observations on nests of the Mourning Dove. Dr. Nokes reported taking a set of eggs of the Spotted Owl. Mrs. Schneider commented on the birds of the Playa del Rey district. The nesting of various hummingbirds was discussed.

Adjourned.—ELLA H. ELLIS, *Secretary*.

NORTHERN DIVISION

JULY.—The Northern Division of the Cooper Ornithological Club held its regular monthly meeting at the Museum of Vertebrate Zoology, Berkeley, Thursday evening, July 30, 1925. President Lastreto was in the chair and the following members and visitors were present: Members, Misses Fisher and McLellan; Mesdames French, Mikesell, Tiffany-Wood; Messrs. Borell, Clabaugh, Dixon, English, Evermann, Lastreto, Swarth. Visitors: Misses Dixon and Mikesell; Mesdames Evermann, Clabaugh, Olshausen; Messrs. Dambacker, Joseph C. Dixon, Mikesell, Geo. R. Olshausen, W. Olshausen.

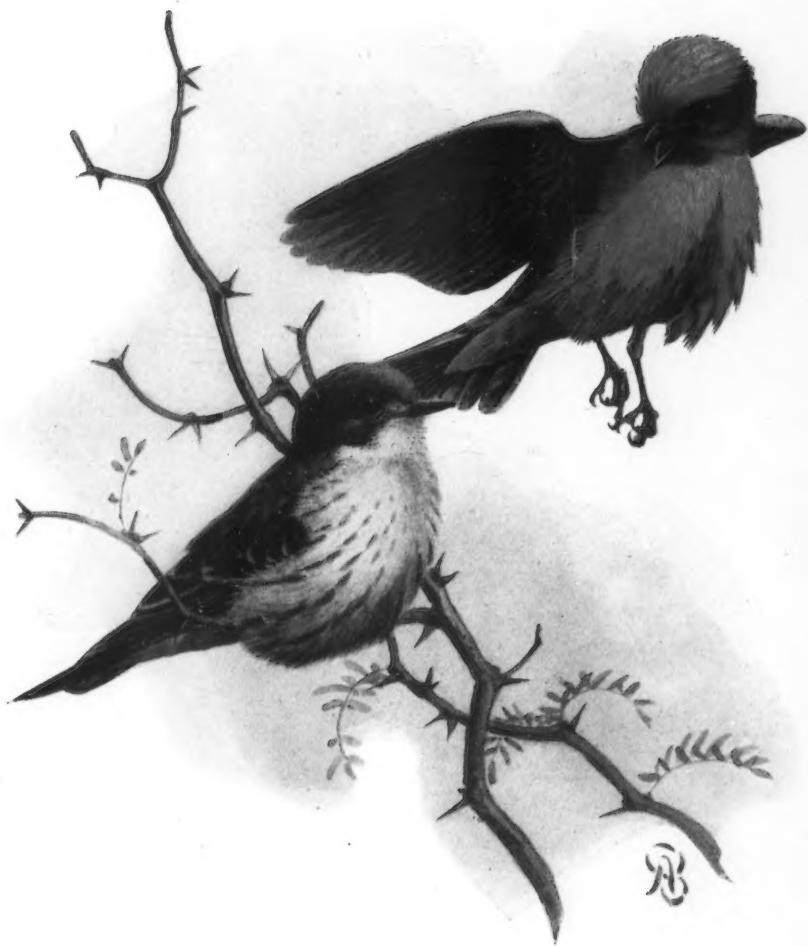
Minutes of the May meeting were read and approved (there had been no meeting in June), and Southern Division minutes for May and June were read. The following names were presented for membership: Ansel F. Hall, 957 Regal Road, Berkeley, California, proposed by H. S. Swarth; Jesse Dade Figgins, Colorado Museum of Natural History, Denver, Colorado, by J. Grinnell.

A communication was read, received from Governor Pinchot of Pennsylvania, in acknowledgment of action taken by the Northern Division at the May meeting, pertaining to preservation of certain tracts of forest in Pennsylvania.

New literature under discussion consisted of one book, "The Protection of Birds, an Indictment", by Lewis R. W. Loyd. Certain problems of bird protection here described as having arisen in England, and, according to Mr. Loyd, being inadequately met, have their counterparts in California and elsewhere in America. The book is one that should be carefully studied by every one seeking information upon this subject.

Mr. Swarth called attention to the persistence, at large, of the little colony of the Australian crested pigeon, *Ocyphaps lophotes*, established during the past two years in the section of Berkeley lying just below the entrance to Claremont Canyon. (See minutes for February, 1924, Condor, xxvi, May, 1924, p. 119.) The exact number of these birds is not known, but they are often seen and reported at the Museum. Their peculiar appearance occasions queries as to the species, as they obviously do not fit into any "key" to Californian birds. Mr. Borell described an attempt at nesting by one pair, on the grounds of the State School for the Blind. Failure ensued due to untimely pruning of the tree that the doves had selected.

The speaker of the evening was Miss Mary E. McLellan, who gave "Some Observations on the Birds of Samoa", illustrated by specimens and slides. Besides descriptions of the habits, actions and songs of the birds she encountered, Miss McLellan gave a concise, though comprehensive, account of the history of our knowledge of the ornithology of Samoa, and of the relationships of the Samoan avifauna to that of adjoining regions. Some of the more striking species were exhibited, such as certain tiny kingfishers, honey eaters, gaudy fruit-pigeons, and the extraordinary tooth-billed pigeon. Adjourned.—H. S. SWARTH, *Secretary, pro tem*.



VERMILION FLYCATCHER

From "The Birds of California"

South Moulton Company

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of 15 cents per line. For this department, address W. LEE CHAMBERS, Drawer 123, Eagle Rock, California.

WANTED FOR CASH—A 12 ga. auxiliary collecting tube, a .32 caliber collecting pistol, or an old, long barreled, .22 single shot pistol that can be rebored. A Stevens model preferred.—GEO. G. CANTWELL, 3602 Keystone Ave., Palms, Calif.

The Cooper Club has been donated a complete set of *The Auk* and offers it for disposal. Mostly in original covers and in good condition; price \$175.00 f. o. b. Los Angeles.—W. LEE CHAMBERS, Business Manager, Drawer 123, Eagle Rock, Calif.

WANTED—To buy first class bird skins of the following groups: Anatidae, Columbae, Limicolae, Gallinae, Rallidae, especially foreign species.—H. B. CONOVER, 6 Scott St., Chicago, Ill.

WANTED FOR CASH—Odd volumes of the Proceedings of the Biological Society of Washington, and North American Faunas nos. 23 and 25. Send me your lists.—LAURENCE M. HUEY, Natural History Museum, Balboa Park, San Diego, Calif.

WANTED FOR CASH—The Auk, vols. 1 and 2 complete; volume 6, January issue. Must be in original covers.—W. B. SAMPSON, 1005 N. San Joaquin St., Stockton, Calif.

FOR SALE—Skin of American Goshawk. Price \$5.50, postpaid.—E. L. SUMNER, JR., 1343 S. Palomares St., Pomona, Calif.

HAROLD H. BAILEY, Miami, Florida, announces his new book, "The Birds of Florida". This will be ready for distribution about September 1. It will contain 76 full page, four-color plates $9\frac{1}{2} \times 12\frac{1}{2}$, and will describe over 480 birds. Those desiring a copy should write the author at once.

FOR SALE—Fishes of North and Middle America, Jordan and Evermann, 3 volumes text, 1 volume plates, octavo, cloth bound; Fishes of North Carolina, Smith, octavo, cloth bound; Bulletin XXVI, Bureau of Fisheries, quarto, cloth bound; 230 separates and pamphlets on fish, mostly original descriptions of new species, 3600 pages and 340 plates. Price \$30.00 for the lot.—FRANK STEPHENS, 3746 Park Boulevard, San Diego, Calif.

CALIFORNIA NATURE STUDY—Two new texts, illustrated; practical for teacher and nature lover. School Nature Study, \$2.00; Primary Nature Study, \$1.75. By Roland Case Ross (Asst. Supv. Nature Dept., Los Angeles City Schools). Order from 388 Dearborn St., Pasadena, Calif.

BIRD SKINS—Those wishing to supplement their collections by the addition of Tropical species can find a great number available from Costa Rica, collectable on order.—AUSTIN SMITH, Apartado 412, San José, Costa Rica.

TO MEMBERS OF THE COOPER ORNITHOLOGICAL CLUB:

Our various circular letters in the past have explained the reason why the Cooper Club is vitally interested in the sale of Dawson's "Birds of California".

We ask those who have not already purchased this wonderful set of books to write us for descriptive matter and specimen pages. In this and following issues of *THE CONDOR* there will appear a series of the beautiful colored plates that embellish the "Birds of California", as an advertising reminder of what those are missing who have not secured these books. Besides scores of similar plates, the volumes are lavishly illustrated with photographic reproductions of birds, nests and eggs, and bird habitats. The editions of the "Birds of California" are limited. When the stock on hand is gone no more will be printed.

Examine the colored illustration inserted in this issue of *THE CONDOR*, and then write at once for further information. Do not miss this opportunity.

W. LEE CHAMBERS, Business Manager
Drawer 123, Eagle Rock, Los Angeles County, California

List of birds, and the number of each, banded in the Western Province during the year which began March 1, 1924, and ended February 28, 1925.

American Eared Grebe.....	1	White-throated Sparrow.....	1
California Murre.....	3	Western Chipping Sparrow.....	335
Green-winged Teal.....	1	Oregon Junco.....	287
Avocet.....	1	Sierra Junco.....	840
Bob-white.....	2	Point Pinos Junco.....	9
California Quail.....	53	Sage Sparrow (group).....	3
Valley Quail.....	109	Rufous-crowned Sparrow.....	5
Mourning Dove.....	5	Song Sparrow (group).....	247
Mexican Ground Dove.....	10	Lincoln Sparrow.....	10
Sparrow Hawk.....	6	Fox Sparrow (group).....	118
Barn Owl.....	4	Spotted Towhee (group).....	153
Screech Owl (group).....	21	Brown Towhee (group).....	450
Road-runner.....	4	Abert Towhee.....	6
Willow Woodpecker.....	10	Green-tailed Towhee.....	60
Flicker (group).....	19	Black-headed Grosbeak.....	53
Pacific Nighthawk.....	2	Western Tanager.....	2
Anna Hummingbird.....	1	Cliff Swallow.....	21
Western Kingbird.....	4	Barn Swallow.....	5
Ash-throated Flycatcher.....	1	Cedar Waxwing.....	51
Say Phoebe.....	1	California Shrike.....	6
Black Phoebe.....	11	Western Warbling Vireo.....	1
Western Flycatcher.....	3	Lutescent Warbler (group).....	11
Hammond Flycatcher.....	2	Myrtle Warbler.....	1
Blue-fronted Jay.....	15	Audubon Warbler.....	294
Coast Jay.....	30	Townsend Warbler.....	1
California Jay.....	81	Tolmie Warbler.....	2
Dwarf Cowbird.....	1	Golden Pileolated Warbler.....	10
Yellow-headed Blackbird.....	22	Western Mockingbird.....	103
Red-wing Blackbird (group).....	26	California Thrasher.....	54
Tri-colored Red-wing Blackbird.....	561	Cactus Wren.....	6
Western Meadowlark.....	2	Rock Wren.....	5
Arizona Hooded Oriole.....	12	Vigors Wren (group).....	25
Bullock Oriole.....	1	Western House Wren.....	17
Brewer Blackbird.....	147	Western Winter Wren.....	5
Bronzed Grackle.....	5	Slender-billed Nuthatch.....	13
California Purple Finch.....	385	Plain Titmouse.....	40
Cassin Purple Finch.....	10	Bailey Chickadee.....	25
California Linnet.....	1286	Chestnut-backed Chickadee	
Willow Goldfinch.....	12	(group).....	7
Green-backed Goldfinch.....	70	Coast Bush-Tit.....	53
Lawrence Goldfinch.....	1	Wren-Tit (group).....	37
Pine Siskin.....	21	Western Ruby-crowned Kinglet.....	7
Vesper Sparrow (group).....	1	Western Gnatcatcher.....	3
Savannah Sparrow (group).....	31	Russet-backed Thrush.....	8
Western Lark Sparrow.....	81	Hermit Thrush (group).....	78
White-crowned Sparrow.....	4	Western Robin.....	46
Gambel Sparrow.....	2387	Varied Thrush.....	3
Nuttall Sparrow.....	171	Western Bluebird.....	20
Golden-crowned Sparrow.....	821		

Total species..... 96

Total individuals..... 9995

